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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 1951



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HUNGARIAN-GDR ECONOMIC COOPERATION DESCRIBED

Budapest FIGYELO in Hungarian No 40, 3 Oct 79 p 10

[Text] The Hungarian-GDR economic connection is as old as the GDR itself. Hungary was among the first to recognize the GDR when it was formed on 7 Oct 49. The first Hungarian-GDR trade agreement was signed in the same month.

In this initial stage of economic cooperation the exchange utilized the opportunities then existing. About 90 percent of the Hungarian export consisted of agricultural and processed food products whereas about 33 percent of the GDR's export was made up of machines and equipment and 50 percent of materials and semi-finished products, among them chemicals. This product mix was, of course, temporary. The trend that began to be visible in the 1950's shows a stable product mix, characteristic of the economic cooperation of the two countries.

From the Fifth Place to the Second

The Hungarian-GDR cooperation has developed continuously and at a very vigorous pace at the last three decades -- it increased at a higher rate than the total foreign trade. Then the first half of the 1950's the GDR occupied the fifth place in Hungary's foreign trade. By the end of the decade it had taken third place (behind the USSR and the CSSR) and in the last decade it became, in terms of trade value, Hungary's second most significant partner.

Among the CEMA countries, it is surpassed only by the USSR. The cooperation, expressed by increasing material trade, has especially expanded in two previous medium-range plan periods. In the period of 1966-1970 the pace of trade increase rose from 6 to 15 percent. The long-term treaty covering the 1971-75 period projected an annual 10 percent increase, amounting to R2.6 billion for the whole period. However, trade increased even faster than projected: in the five years it exceeded R3 billion. The treaty covering the current plan period projects R4.9 billion in trade, an increase of 57 percent.

	1975	1976	1977	1978	1979 projected
Export	399	498	580	578	
Import	472	540	598	667	
Total trade	861	1038	1178	1245	1374

Even in the current plan period trade has increased from year to year. At current prices the average annual increase has been 10 percent. When the increased prices of the traded goods are considered the pace of increase is more moderate.

The Main Trade Items

The main category in the economic cooperation between the two countries is industry; from the Hungarian side it also includes agriculture. More than 90 percent of the items we import from the GDR are industrial products: materials, semi-finished goods, machines, consumer items. About 75-77 percent of Hungarian exports consist of these categories. The rest are agricultural and food products. It follows that we import more materials, semi-finished goods, machines and consumer products than we sell in the GDR. Viewing all of our CEMA imports, the GDR's share in machine imports is about 25 percent and in industrial consumer products it is about 33 percent. The GDR's share is over 30 percent in fertilizer and herbicide imports. A similar comparison - CEMA exports - shows that 20 percent of our exported food and food industry products, 10-11 percent of our industrial consumer products, and 17-18 percent of machines and transport items go to the GDR.

The trade is characterized by the complementary economic and production structures and have contributed, especially in this decade, to treaties of the collaboration and product specialization between the two countries. The trade that derived from specialization and collaboration last year reached 36 percent of the Hungarian and 20 percent of the GDR exports.

Roughly 120 bi-lateral and multilateral treaties regulate the specialization and production cooperation today. The greater part of the long-term production cooperation is in the key area of the machine industry. This is a result and, at the same time, a disadvantage of the planned work sharing. In the reciprocal trade the share of machines and equipment is extraordinarily high: it approaches 70 percent. Product specialization and cooperation increase the possibilities in the reciprocal machine shipments and this can be seen by the volume of traffic.

Foremost in The Machine Industry

The trade of machine-industry products grew by R160 million between 1976 and 1978: it was R700 million in 1976, R800 million in 1977, and R860 million in 1978. It is expected to reach R900 million this year. The

concentration on specialization and cooperation within the machine industry is logical and a positive factor considering the volume of reciprocal machine shipments. We should, however, also mention that specialization and cooperation has only occasionally developed in the other branches of industry.

To this day, the most important and successful Hungarian-GDR cooperation has occurred in the road transport industry. The roots of cooperation reach back to the 1950's. The GDR has been buying Ikarus buses since 1952. It has contributed significantly to the important role the Hungarian road transport industry plays in the multi-national cooperation of the CEMA countries. As a result of the Hungarian-GDR vehicle cooperation, about 90 percent of the city and long-distance buses in the GDR are Ikarus buses, while about one-third of the Hungarian road vehicles are Barkas, Robur, IFA, Wartburg, and Trabant -- all of them made in the GDR. (The MZ motors and Simson mopeds have similarly high ratios.) Cooperation in the road transport industry now extends to production of spare parts, unitassemblies products, and accessories. The main parts of the Ikarus-IFA worker transport buses are produced in the GDR. Ikarus continuously uses camshafts, heaters, and drivers' seats that were made in the GDR. The partner country's vehicle industry builds Hungarian electrical equipment into its products. The vehicle industry's economic and trade importance is shown by the fact that in 1978 R290 million out of the 860 million machine trade consisted of road vehicles and parts and accessories.

The second place is occupied by cooperation in agricultural and food machinery production. This includes collaboration in the development, production, and shipment of combines and hay-collector food industry machines. Machine industry cooperation extends to computers, hydraulic and transport equipment, and electronic parts. Hence, the specific importance of the machine shipments can be seen in the road transport of people and materials in the two countries. The machine shipments also related to the development and investment schemes of the various plans periods. GDR machine exports have had important roles in the reconstruction of the textile and printing industries and, earlier, in the modernization of the mine at Gyon-gyos-Visonta.

Hungary and the GDR plan to continue the economic cooperation after 1980 by bilateral and multilateral production cooperation, continuous plan adjustments, the exploration of new possibilities on the part of the production and foreign trade companies and participation of goal programs as expressed by new, multi-sided products specialization and cooperation. The structure of product shipments is not expected to change and thus the dynamics of trade increases will be decisively influenced by the progress fo machine industry cooperation.

MINISTER ASSESSES STATE OF POWER INDUSTRY

Sofia ENERGETIKA in Bulgarian No 7, 1979 pp 4-8

[Welcoming speech by Nikola Todoriev, minister of power supply, on the occasion of a ceremony dedicated to Power Day in the Georgi Kirkov Hall in Sofia]

[Text] Dear comrades and guests. The holiday and high social duty have brought us together this evening in the auditorium of the Party House, full of optimistic spirit and a good mood, in order for us to make a traditional assessment of our labor achievements. On Sunday, 17 June, our public celebrated the 13th Power Day. In recalling 1967, when the calendar of new socialist traditions was enriched by this holiday, we are happy and proud that over the brief history of its existence, the industrious Bulgarian power worker has added new, ever more convincing facts to affirm the high praise and recognition by the party and the people of his deeds. With each passing year, this holiday becomes all the dearer and more essential for us. The older it becomes, the more numerous and vast the achievements which are entered on the pages of its chronicle, deeds recorded by the golden hands of thousands of workers, installers, technicians, engineers, construction workers, designers, scientific workers and specialists united into the labor collectives of our ministry.

For this reason with profound satisfaction I am carrying out the instructions of the leadership of the Ministry of Power Supply and the Central Committee of the Trade Union of Miners, Metallurgical and Power Workers and Geologists to cordially congratulate on the occasion of Power Day our guests, the pace-setters of the power industry and everyone present this evening in the Georgi Kirkov Hall, and through them all the workers of the economic combines, organizations, enterprises, institutes and bases of the Ministry of Power Supply and to wish them new creative successes, good health, good cheer and much happiness!

The celebrating of Power Day is being carried out in an atmosphere of profound and greatly significant changes in our social and economic development after the 11th Congress, the National Party Conference and the important plenums of the BCP Central Committee. The sense, significance and

responsibility of the balance sheet which we are drawing up this year are particularly great because this is the year of the 35th jubilee of our socialist revolution.

This is the year in which a Bulgarian carried out his first orbital flight and took the first step in space.

The optimism of the present holiday is reinforced by its coinciding with a particularly stirring fact which must mark today as an historical event of decisive significance: at present the eyes and hopes of the entire world are focused on Vienna where the top leaders of the two most powerful world powers are meeting to sign the agreement popularly known as SALT-2. Along with all honest and peace-loving people of the world, we also are impatiently awaiting the news from Vienna, in maintaining the deep belief that the news will be good as sitting at the conference table is the most prominent statesman of our times, the resolute and consistent fighter for peace, the General Secretary of the CPSU, Leonid Il'ich Brezhnev.

It is particularly pleasant for me in the solemn atmosphere of the holiday evening to announce the decision of the Bulgarian State Council to award titles and orders and medals to workers, specialists and leaders who have achieved the highest results in their labor activities during the past year. Among them are: Georgi Kis'ov, brigade leader from the Electric Construction Combine and Dimitur Minkov, director of the Maritsa-Iztok-3 TETs [thermal power plant], who are new heroes of socialist labor in the power industry, Gencho Kalaykov, director of the Power Supply and Central Heating Administration in the Ministry of Power Supply, and Nikola Minchev, director of the Electrical Installation Administration in Plovdiv who have been awarded the title of Honored Power Worker, and Georgi Ranchev, chief of the power supply region in Novo Zagora, winner of the Georgi Dimitrov Order.

Another 39 pacesetters and advanced persons in production also received high awards.

The celebrating of the holiday coincides with the anniversaries of our labor collectives.

The Reservoirs and Dam Series Directorate marks the 25th year of its existence and for tenacious activities by the collective in the area of building, maintaining and preserving water power resources, has been awarded the Georgi Dimitrov Order.

In the year of its 30th jubilee, for contributions as a collective agitator, propagandist and organizer, and as the established social tribune of scientific thought, our scientific and technical magazine ENERGETIKA has been awarded the Order of the Red Labor Banner.

We are convinced that the new winners of the state distinctions will shirk no effort and ability in their labor activities in the future, in passing on their rich experience and knowledge to the younger workers and leaders

in carrying out the party's command to turn advanced experience into mass practice.

Allow me to thank our heroes, our pacesetters and order winners for their professional ability and creative daring in labor, and to cordially congratulate them on their merited awards.

Congratulations, dear comrades, and good luck!

The holiday is all the more joyous and happy the more successful the labor by which we have earned the right to celebrate it. It will begin, as is our custom, with the best and chief victory of the Bulgarian power workers. This is the reliable, prompt and high quality supply of the national economy with energy and fuel during the entire previous year and the successful fulfillment of the ministry's plan for all the physical, volume and technical-economic indicators. The decisions of the National Party Conference were the guiding principle in our work. The successful fulfillment of the quotas for increasing social productivity [of labor], reducing material expenditures and the ever fuller utilization of production capacity has been the contribution of all the labor collectives of the Ministry of Power Supply.

Last year, electric production and fuel output in our nation underwent a significant growth. At the end of 1978, power consumption reached 35.3 billion kilowatt hours, and the average annual per capita consumption was 3,990 kilowatt hours. At present our nation has a power base which can measure its growth by world standards and against the leading countries. It possesses 7,518 megawatts of electric capacity, the basic portion of which is concentrated in 12 large thermal power plants and the atomic plant near Kozloduy. A similar consolidation of capacity exists at the hydropower plants, 90 percent of which have been built using stored water in downstream plants. This policy of concentrating capacity in power supply is to be continued. It is the basic factor for saving power resources and increasing labor productivity.

As of February this year, our electric power system began operating in parallel with the United Power Systems of the CEMA member nations and with the Unified Electric Power System of the USSR through two electric hookups. This, along with the connecting of new transformer capacity and important power lines, has improved the operation of the system and increased its stability.

Since our holiday is at the beginning of the summer, when the calendar year is almost half over, the balance sheet which we draw up also encompasses the last 5 months of 1979. With a feeling of satisfaction we can inform you that the results of fulfilling the counterplan of the ministry during these 5 months were good, and provide reason for optimism. The additional tasks were fulfilled by 2.45 billion leva above the counterplan. During the same period, 12,149,000,000 kilowatt hours of electric power were produced, and this was 0.8 percent more than the planned quantity. In comparison

with the 3 months of the previous year, we produced 1.64 billion kilowatt hours more, and a growth of 9.6 percent was achieved, and here, let me stress this, without any limitations and problems in power supply. The plan for the production of thermal power was also fulfilled by 173,000 gigacalories, and this meant a growth of 5.3 percent in comparison with the same period of last year.

These successes undoubtedly are the fruit of the concerted efforts of all the labor collectives and this truly is the best method for celebrating Power Day.

In this regard let me express my gratitude and that of the entire leadership of the Ministry of Power Supply for the high social awareness, patriotism and industriousness of everyone who contributed to the successful fulfillment of our plan quotas, and for the worthy report to the motherland on the occasion of our professional holiday.

And so, today, in summing up, we must point out that we have successfully solved the equation of the energy balance, in speaking figuratively, but it was not an easy one to solve. And the providing of stable and high-quality power supply during the autumn and winter season is not an equation with one unknown.

The cold season early caused a rapid rise in the electric loads, and in February their maximum reached 6,218 megawatts, which is 6 percent over the maximum peak load last year. The peak loads were handled with great difficulty due to the serious concern and effort to stockpile sufficient coal and to supply maximum water in the reservoirs.

The severe winter again posed great testing for us. For this reason with good reason the preparations for the autumn and winter season in power supply started in the early spring. This year, however, the winter conditions were unusually severe. You all recall the announcements of natural disasters caused by the winter blizzards over virtually the entire European continent. They put out of commission a number of well organized power supply systems and paralyzed life in many population points. Natural disasters also hit our country as early as the end of October in Kurdzhali and Khaskovo okruga, and in February, in Northwestern Bulgaria. The wires of the power transmission lines for many hundreds of kilometers iced up, more than 3,000 electrical poles were knocked down and quickly thawing snows flooded the open-pit mines. It was not easy for the power workers during this period. And it must be said that they emerged victorious from the duel with the forces of nature. With much willpower, by the mobilizing of forces and strict organization the consequences were rapidly eliminated and the population and national economy in a very short time received the vitally necessary energy.

At its session the ministry board gave high praise to the work of the power system during the autumn-winter season, in expressing merited praise and

gratitude to all the labor collectives who contributed to the successful work. And today from this holiday rostrum I would again like to repeat the high praise for the tenacity and responsibility shown in supplying the nation with the required amounts of energy during the entire autumn and winter season.

Heroism in the extraordinary circumstances can be seen by everyone, but I would like to also pay my respects to the labor feats in daily activities which do not stand out in their vivid self-sacrifice or do not strike the eye, but are just as heroic, because they continuously meet the requirements of the economy and everyday life for power supply, and these requirements are high and most importantly, they are permanent.

The Bulgarian power worker has contributed his share of the present, and this in turn reshapes his perception of the world. As a participant in the creative deeds of the age, he not only grasps its spirit, but also makes an active contribution to solving the problems of today and tomorrow. This trait of our contemporary has been inherited from the generation which 35 years ago, with Dimitrov confidence and enthusiasm, established the bases of socialist electrification, and which has willed this confidence to us. In recalling with profound gratitude the deeds of the veteran power workers, we are obliged to do everything to ensure the continuation of their spirit and the unwritten moral code by the younger generation.

Our schools and universities, inspired by the great concern shown by the party for improving public education, will turn out ever better trained and more studious young people for the laboratories of life.

Our high social duty is to help them discover the correct path and to encourage the shoots of youthful daring. We must become the masters of new, even more modern nuclear installations, highly efficient thermal plants, and automatic control systems, in a word, the most advanced equipment which requires highly skilled, educated and convinced people. For this reason with a feeling of responsibility and a sense of the future we must create our own, worthy replacements.

Comrades. Even in the holiday it is permitted, and not only permitted but also necessary, to say a few words which cast a shadow on our overall efforts to work efficiently and creatively.

As yet the utilization of production capacity at certain power projects is beneath the capabilities of the people and the equipment. The state has provided significant capital investments for the new projects and for expansion, as well as for modernization and reconstruction of the physical plant which, it is no secret, after more than 25 years of operation is not only obsolete but physically worn out. By reconstruction and modernization, we will endeavor to improve the utilization of the production capacity, to constantly reduce the material expenditures and raise labor productivity.

In 1978, the utilization of hydropower and nuclear capacity, in accord with their place in covering the load schedule, was good. The thermal plants also achieved good successes, with the Varna TETs and the Ruse TETs reaching average loads of 83-88 percent of the rated capacity. However, this was not the case at the Purva Komsomolska TETs and the Maritsa-Iztok-2 TETs. Due to the difficult production conditions and bad fuel, their use factor was between 58 and 71 percent. The use of a direct fuel combustion system and the presence of monoblocks at the Maritsa-Iztok-3 TETs provided an opportunity for this plant to maintain a higher power load with the same fuel base. The collective of the Maritsa-Iztok-3 TETs achieved a comparatively high hourly use factor which in 1978 in operating only one unit was 6,726 hours. A significant improvement in the use of production capacity is expected to be achieved at the old East Maritsa plants after their reconstruction for operating on undried fuel. The same thing is expected for the Bobov Dol TETs after its reconstruction for increasing the slagless capacity.

The positive trends in the use of the machinery and equipment are of important significance not only for achieving the planned production volume, but particularly so for increasing its efficiency. For example the economists have calculated that if the utilization of machinery and equipment in the national economy would be improved by just 1 percent, it would be possible to produce about 160 million leva worth of additional national income.

As well as the ideas may be worked out for modernizing equipment and production methods in engineering plans, these will remain only good intentions if all the participants in the production process are not engaged in carrying them out. For this reason, as comrade Todor Zhivkov stressed, the economic approach in production management at present is of priority significance. Its consistent application, the introduction of economic analysis and economic accountability in daily practical activities are crucial for the successful carrying out of the major and complicated tasks of power supply under the conditions of the new economic mechanism. They require a profound reorganization of our thinking, style and methods. "Creative work is impossible without risk," said Comrade Todor Zhivkov, "and we are in favor of those leaders who assume a reasonable risk of creativity."

Production discipline, and the unconditional and strict observance of the prescribed operating conditions of the equipment play a crucial role in increasing work efficiency. The correct style of work requires not the waiting for basic overhauls, but rather the providing of good routine maintenance and steady preventive repairs.

The average duration of repairs in 1978 was 130 days for the steam generators and 97 days for the turbine units. If we would reduce the average repair time by just 10 days, and this is completely feasible, the annual hourly use of the TETs could be increased by 1.7 percent, or by 80 hours, and this is a major reserve.

Preventive measures must lead to a sharp reduction in equipment emergencies. An analysis made by our electric production administration has shown that a reduction of just 10 percent in the conditionally unproduced power caused by stoppages in 1978 could increase the hourly use factor of thermal capacity by another 50 hours. This is another major reserve.

The quality of major overhauls is crucial for increasing equipment productivity. This year, the Energoremont [Power Repair] Economic Association which has been entrusted with this basic activity in power supply will celebrate its 10th anniversary. Let this be an occasion, along with good words for the more effective work and the increased efforts to improve quality in recent years, to wish from the workers and engineers at the enterprises and bases of Energoremont even greater tenacity and creativity in their diverse and highly responsible activities.

Per capita energy consumption in Bulgaria now exceeds 4,800 kg of conditional fuel units annually, and this is 2.2-fold more than the average world consumption. This eloquently shows the high standard of living which we have achieved, as its basic indicator is precisely specific power consumption. The December party program and the decisions of the 11th Congress anticipate a constant increase in the standard of living, and this is linked with a general rapid growth of economic development, and particularly the strategic sectors, including power supply, which are the agents of scientific and technical progress. Intensive economic growth is related to a rise in power consumption.

There are three main areas for ensuring the power needs during the Seventh Five-Year Plan and beyond: in the first place, the ever wider use of local power sources and mainly coal; secondly, high development rates for nuclear power, and thirdly, the ever more energetic discovery of the means and ways for maximum utilization of primary power resources and for increasing their energy efficiency.

A constant trend in the change of the structure of our power balance is the ever broader electrification of it. As is known, electricity is one of the most expensive types of power obtained from repeated transformations in complicated equipment and made additionally expensive by the complicated automated transmission. But, and let us not forget!, it is also the most modern energy source, it is universal, clean and convenient in all regards with the exception of its storage.

At present 24 percent of the primary energy resources in the world is used for the production of electric power. According to the data of the Council of the International Conference of Large High Voltage Electric Systems, SIGRE, by the year 2020, this portion will increase up to 50 percent, with the production of electric power rising by more than 5-fold over the same period, or by an average of 4.4 percent per annum.

In 1978, the structure of electric production in terms of the types of power production capacity in Bulgaria was as follows: 72 percent of the total quantity of electric power was produced at TETs, 9 percent at VETs [Hydro-power Plant], and 19 percent at the AETs [Atomic Power Plant]. In the future, this structure will change by an increase in the share of atomic plants which in 1990 will provide about 40 percent of the total production. This is one of the world trends.

Often in conversations with people from different professions, at meetings and conferences, the question is raised of whether or not we must develop nuclear power. The answer to this question is cut and dried as there is no existing alternative.

World oil output, according to the forecasts of SIGRE, will rise up to 1980-1990. After this period, oil will be used only in transportation and the chemical industry. From 1980 it will be essential to sharply curtail its use for heating, and after the year 2000 for transportation as well. The words have come true of the great Russian scientist Mendeleyev who 70 years ago cautioned: "Don't burn up bank notes!" in bearing in mind that oil is not only a fuel but also the most precious chemical raw material. The enormous consumer value of liquid fuel by the end of the 1960's had led to an unrestricted rise of its consumption on a worldwide scale. According to Soviet research, a mere 1 percent increase in the consumption of oil in the national economy provides an effect of 1 billion rubles. However the reserves of liquid fuel on our planet will last for around 30-40 years, and this indicates that the petroleum age has passed its zenith.

Coal supplies are much larger, and they are sufficient for centuries, but the demand is constantly increasing and according to the forecasts after the year 2000, this demand will exceed today's by 4-5-fold.

While in 1975, the production of nuclear power was under 1 percent of the world energy balance, by 1980, it is expected to reach almost 4 percent, by the year 2000 it will be 13 percent, and 20 years later will exceed 30 percent. There are no other possibilities of satisfying the forecast growth of electric consumption except by the accelerated development of nuclear electric production. If we speak more precisely of the prospects of electric power, the nuclear plants will play the crucial role in its development. By the year 2000, they will produce 40 percent of the entire electric power in the world, and just 20 years later, 64 percent.

It can firmly be said that we have already entered the age of the flourishing of nuclear power.

The obvious radical restructuring of electric production involves the solution to very complicated problems, including ecological, financial and social ones, and in the Western countries, also foreign policy ones. All these problems must be solved. Because, as I have already said, there is no other alternative.

I must particularly draw attention to the third strategic area in the shaping of the energy balance.

This is the question of raising the energy efficiency of the primary power resources and the most rational utilization of the power sources. Vladimir Il'ich Lenin at one time wrote: "Fewer fancy phrases and more simple, effective work and concern for each pud of grain and for each pud of coal." With good reason the chief strategist of the Soviet economy put fuel on equal footing with grain, in demanding that it be strictly saved. At present fuel and energy are becoming ever scarcer, and their production is ever more complicated and expensive. For this reason Lenin's demand for thriftiness stated precisely 60 years ago is becoming ever more urgent with each passing day.

The great concern of our party and state for the efficient use of energy and resources is expressed in the decree of the Council of Ministers of 18 May 1979, and the carrying out of this must provide a maximum savings in any activity, at any work place and in each home. A rise in the efficiency of our economy is directly tied to the savings of materials and raw products. Economy and economics, as is said, are not just words with the same root. They are inseparable as cause and effect, as the basis and the superstructure.

The work of our ministry is being consistently reorganized in a spirit of the high demands of savings and in a spirit of the decree. This is affirmed by the change in the structure of production capacity in the first 5 months of this year. At present the share of the thermal plants in total electric production is 64 percent, some 20 percent for the AETs and scarcely 5 percent from the mazut-fired plants. Here 57.5 percent of the electric power produced at the TETs comes from plants operating on local coal. The consistent policy of saving mazut and natural gas during the first 5 months of the year has provided a savings of 112,000 tons of conditional fuel units for them. At present the world is hungrily consuming the resources which nature has stored for billions of years. Energy is essential and to restrict its consumption means to halt development, the flourishing of science, culture, and the rise in the standard of living of the people. And this is impossible and runs contrary to the main goal of our system at the center of which stands man with his diverse needs. And since the main task of the national energy complex is precisely to constantly and promptly meet the energy needs of society, the work of discovering all the potential opportunities for power production and for incorporating unconventional sources in the energy balance must be carried out at an accelerated pace. The struggle for savings is not and cannot be a brief campaign but rather is a long-range strategy. It is not mere good intention, but rather the basic method for the rational and far-sighted managing of the economy at each socialist enterprise. The carrying out of such a policy is naturally tied to the surmounting of many subjective and objective obstacles. We live under the conditions of real socialism, in a society which has its own unsolved problems and difficulties. "Real socialism," said Comrade Todor Zhivkov, "is not yet the embodiment of human and social perfection." A great deal of effort is required to achieve

this. However, no matter how complicated the problems confronting us, they must be solved by our own will and creative energy. And here is our, shall I say, historic optimism expressed in the lines of the poet which I would like to quote:

"Friends, be optimists and dreamers! This is our starting point! This is the strength and glory of the class! Our path is not an easy one, and the pulse of the age has grown faster. But we have vowed that life will become even better than a song and better than a spring day."

The optimism of the Bulgarian power worker is rooted in the tradition of his work which has brought us together this evening at the Party House. This obliges us to work in a manner so that each man makes a maximum contribution to increasing the efficiency of power supply, and to the thrifty and rational use of social and natural riches.

The romance and pathos of our times are where the hundreds of tons of metal and equipment lie. They are the inspiration for the pen of the poet, for the camera of the documentary film maker and the artist chronicler who seek the rhythm of our creative deeds and the pulse of the age in the spin of the turbines and the frequency of the 50 hertz.

The efficiency and quality of power supply under present-day conditions mean primarily the quality and reliability of the end product from the single process of coal mining--electric production--electric power. The more firmly the economic leaders of the economic mining and power combines learn this fundamental truth, the more rapidly we can multiply the effect from the activities of our every unit as is anticipated in the program for the development of the national power complex.

For 3 months our nation has been operating under the new time. And if at the outset some people had doubts as to the advisability of introducing daylight time, the results which we have obtained exceed the most optimistic expectations.

Thus, the absolute savings of power in April were 23 million kilowatt hours, in May 15 million, with the evening load reduced, respectively, by 300 megawatts in April and 430 in May. As a total up to the present we have saved over 50 million kilowatt hours or as much as was expected up to the end of September.

In the spirit of the optimistic balance drawn for our holiday, let me add one other impression: The struggle to save energy and resources is gradually and steadily penetrating ever deeper into the awareness of our contemporary in order to turn it into a standard of conduct. And when we achieve a decisive turn in thinking and practical actions, we will take a long step ahead on the ascending spiral of our socialist ascent.

The struggle for high quality and efficiency in power supply is organically linked to the struggle to accelerate scientific and technical progress, and to master and apply in practice the achievements of our science and of the other advanced countries, primarily the USSR. Without the consistent implementation of this policy, it is inconceivable to increase social labor productivity, the saving of time, materials and raw products. "A scientific approach," said Comrade Todor Zhivkov, "requires not merely working better tomorrow than today, but rather working in such a manner as to master the heights of scientific and technical progress."

Our scientific workers and researchers at the Scientific Research Planning and Design Institute for Power Systems, the NPP Tekhenergo [?scientific and production enterprise for power engineering], and the Scientific Research and Design Institute for Industrial Power Supply, the development bases and scientific groups are confronted with immediate tasks which are dictated by the demands of the strategic areas for the development of the national power complex.

In speaking of the ways which will provide for the carrying out of the power policy in the next few years, we must again emphasize the decisive role of our cooperation with the CEMA member nations and primarily the USSR. This year a wide international community celebrated the 30th anniversary of the founding of CEMA. At present this socialist economic association brings together countries with a territory of about one-fifth of the world and a population of about one-tenth of all mankind, and produces one-quarter of the world national income and about one-third of the world industrial product. The creation of the Unified Power Systems of the European CEMA Member Nations has played a major role in solving our electric power problems, and the comprehensive program which is being worked out at present will deepen and broaden our economic ties.

The USSR plays the major role in solving the energy problems of the socialist commonwealth, and it is increasing its fuel and energy base both to meet its own requirements as well as to provide the maximum possible assistance to the fraternal socialist countries in their energy programs. With help from Soviet specialists and Soviet equipment, up to now the CEMA member nations have built about 100 electric plants.

The all-round cooperation and integration of Bulgaria with the USSR are a natural result of our historical development and an objective necessity in creating a developed socialist society. The most important socialist victories of our power industry, the thermal plants at the East Maritsa Power Complex, the Varna TETs and the Kolzloduy AETs, are the offspring of fraternal cooperation with the USSR. The expansion and construction of these projects at present are being carried out with Soviet equipment and with the involvement of Soviet specialists who on the spot pass on the experience of the great Soviet power school.

In August last year, Petr Stepanovich Neporozhniy, USSR minister of power and electrification, visited our ministry. The visit of the Soviet minister was a new stage in strengthening our traditional cooperation. The agreement which was reached between our two ministries opens up new horizons for expanding and strengthening Bulgarian-Soviet cooperation, and is the basis for a guaranteed program of Bulgarian power engineering up to the year 1990 which will be carried out with the newest and most modern equipment. This is in full accord with the policy of the ever greater integration between our two peoples, and to the principle of "loyalty for loyalty and friendship for friendship."

On the day of our holiday, on behalf of all Bulgarian power workers, I would like to express the warmest words of gratitude and respect for all the Soviet comrades who have spared no effort and who have worked with great inspiration and a high international feeling to create the Bulgarian power industry and to strengthen the eternal and unshakable Bulgarian-Soviet friendship.

Our trade union and Komsomol have also made their contribution to the holiday balance sheet of our labor feats, and they have mobilized the efforts of the collectives by developing everywhere the socialist competition in response to the Appeal of the Central Committee to fulfill and overfulfill the counterplans. The socialist competition more and more is being turned into an effective factor for increasing labor productivity in the power industry, for widely spreading advanced experience and for successfully introducing the achievements of scientific and technical progress. The all-round and complete unleashing of the constructive energy of the labor collectives is the basic path for carrying out the strategic motto of the five-year plan for high quality and efficiency everywhere and in everything.

On this holiday wreathed by the light of the 35th jubilee of the 9 September victory, we think not so much of what has been done over the 35 years as what we must achieve tomorrow. And all our thoughts and deeds are full of confidence in tomorrow and in the rightness of the party's strategy.

Power Day, let me say again, is a recognition of our achievements and our contribution to the construction of socialism. We accept this recognition with a profound sense of satisfaction, and at the same time with a true feeling for the professional and civil duty to the future, and with a complete understanding of the necessity of mobilizing our forces for the new, higher, more responsible and more inspiring tasks.

On the day of our professional holiday, on behalf of the leadership of the Ministry of Power Supply and our labor collectives, I would like to assure the party, the government and all the Bulgarian people of the wholehearted readiness of the Bulgarian power worker by his labor and high civil awareness to contribute actively to the triumph of the party's cause which is devoted to the happiness and well-being of our thousand-year-old fatherland and our brilliant socialist future.

Let us celebrate, comrades, our fine holiday!

GOVERNMENT TAKES ADDITIONAL MEASURES TO SAVE ENERGY

Sofia DURZHAVEN VESTNIK in Bulgarian 25 May 79 pp 387-389

[Decree of the Council of Ministers No 23 of 18 May 1979 Governing the Additional Savings of Energy and Fuel]

[Text] The prices for oil and oil products are sharply rising on the international market. The nation is experiencing ever greater difficulties in securing the necessary liquid fuels, electric power, natural gas and other energy resources. It is imperative to additionally reduce their consumption by improving the operation and maintenance of the various types of fuel installations, optimize the production processes, reduce the consumption rates, and improve the production structure in the aim of reducing the energy intensiveness, replacing liquid fuel and natural gas at certain power plants by local coals, reducing production which involves a high consumption of liquid fuels, rationalizing the transport ties, and other measures.

In this regard, the Council of Ministers decrees:

Article 1. The ministries, other departments and executive committees of the okrug people's councils and the Sofia Obshtina People's Council in 1979 and 1980 are to increase the efficiency of the industrial and household boiler installations by at least 5 points. For this purpose, with the aid of the Ministry of Power Supply, they are to work out specific measures which prior to 30 June 1979 are to be approved by the Ministry of Power Supply.

Article 2. (1) The ministries and other departments are to work out the fuel and energy balances for the enterprises of their systems, in determining the quantity of secondary energy resources and approving specific programs with technical measures for the economically most efficient use of them, and prior to 30 September 1980, are to submit these for approval to the Ministry of Power Supply.

(2) The Ministry of Power Supply through its control bodies is to exercise systematic control over the prompt fulfillment of the programs under Article 1 and Article 2 and each quarter is to inform the Bureau of the Council of Ministers as to the results.

(3) The design organizations in drawing up plans in all phases of designing are to work out a section for the fuel and energy balance both for new projects as well as for modernization, reconstruction and expansion of existing ones.

(4) The technical councils of the design organizations, the departmental expert councils and the Higher Expert Technical and Economic Council under the State Planning Committee after 1 January 1980 are not to review plans which have not been worked out in accord with Paragraph 3, and the leaders of the departments are not to approve them.

Article 3. (1) The Ministry of Power Supply, the ministries, other departments and executive committees of the okrug people's councils and the Sofia Obshtina People's Council and the public organizations during the heating seasons of 1979-1980 and 1980-1981 are to reduce the temperatures by 2° in the heated rooms over the designated temperature.

(2) The Ministry of Power Supply prior to 31 August 1979 is to correct the temperature schedules for the production of heat by the centralized heating supply systems in accord with the preceding paragraph.

(3) The Committee for Architecture and Public Works under the Council of Ministers and the Ministry of Power Supply prior to 31 July 1979 are to issue instructions for carrying out Paragraph 1 of this article for the local heating installations.

(4) The instructions of the Committee for Architecture and Public Works and the Ministry of Power Supply of the previous paragraph are obligatory for the ministries, other departments and the executive committees of the okrug people's councils and the Sofia Obshtina People's Council and the public organizations.

Article 4. (1) The fuel supply for the power plant at the Kremikovtsi Metallurgical Combine, including for the expansion, is to be set for lignite coal with an addition of coke and blast furnace gas.

(2) As of 1 July 1980, the burning of mazut and natural gas is to be halted at the Devnya Karl Marx TETs [thermal power plant]. For this purpose the Ministry of Chemical Industry is to work out a program and ensure the reconstruction of the boiler units for burning coal.

(3) As of 1 July 1979, the burning of mazut at the TETs at the Stara Zagora SKhK [chemical combine] is to be gradually halted by the end of 1980. The Ministry of Chemical Industry during this time is to provide a maximum loading of the coal-fired boilers at the plant and the shutting down of the mazut-fired ones.

(4) As of 1 January 1981, the consumption of mazut is to be limited at the TETs at the St. Kirilidzhiev TsKhK [pulp and paper combine] to 15,000 tons

annually. For this purpose the Ministry of Forests and Forest Industry is to provide the prompt converting of the boilers which had been reconstructed for liquid fuel from solid fuel to again burn coal, and to create conditions for using the mazut boilers only for peak conditions.

(5) The expansions (including the water heating capacity) at the Dimitrovgrad Maritsa-3 TETs, the Republika TETs, the TETs at the Stara Zagora SKhK, the TETs at the Pleven Niftokhim [petrochemistry] Petrochemical Combine, the thermal sources at the Radomir ZTM [heavy machine building plant] and the Third Metallurgical Base are to be built for operating on local coals.

(6) The Ministry of Power Supply is to produce the additional quantities of coal required for carrying out the tasks under the preceding paragraphs. For this purpose, it is to organize the conversion of the mines to continuous operating conditions and prior to 1 October 1979 is to submit a corresponding proposal to the Bureau of the Council of Ministers.

(7) The Ministry of Construction and Building Materials prior to 31 May 1979 is to submit to the Council of Ministers a proposal for reducing steam consumption for the steam curing of industrially produced structural elements.

Article 5. (1) The Committee for Architecture and Public Works with the agreement of the Ministry of Construction and Building Materials and the Ministry of Power Supply, prior to 31 December 1979, is to work out heat engineering standards for the designing of buildings with improved thermal insulating, and to propose measures for improving thermal insulation in the existing buildings.

(2) The Ministry of Construction and Building Materials is to work out standard methods for providing thermal insulating in new construction and in reconstructing the old buildings.

Article 6. (1) The Ministry of Transport with the approval of the State Planning Committee prior to 30 June 1979 is to work out a program for reducing fuel consumption in public and departmental transport by: the more efficient use of the vehicles, shifting freight from motor to rail transport, thinning out and shortening the buslines and expanding the trolley bus network, reducing the flight hours of aircraft and shutting down certain unprofitable air routes.

(2) The Ministry of Electronics and Electrical Engineering, the Ministry of Machine Building and the Ministry of Transport are to conduct studies, run experiments and when advisable submit a proposal to the Council of Ministers for introducing a suitable electronic ignition device for all gasoline-fired internal combustion engines for the purpose of saving gasoline.

Article 7. (1) The annual limit is to be reduced for the operation of official cars by 30-50 percent.

(2) The limits are also to be reduced for the annual run in kilometers for official cars as approved by the Decree No 109 of the Council of Ministers of 1974 and the Ordinance Governing the Procedure for the Supply and Use of Cars for Official and Special Needs (DURZHAVEN VESTNIK, No 44 of 1973; amended and supplemented in No 92 of 1974), as follows:

1. To 30,000 km for cars on list No 1;
2. To 20,000 km for cars on list No 2, and to 25,000 km for cars serving the general directors of combines and state economic associations;
3. To 12,000 km for all other official cars.

(3) The limits can be increased for the operation of individual official cars by stopping the travel of other vehicles and turning them over for sale to the Motor Equipment and Automotive Services DSO [State Economic Association] for the purpose of efficiently utilizing the means of transport and reducing the number of drivers.

(4) The Ministry of National Defense, the Ministry of Internal Affairs and the other special departments are to restrict the limits for the operation of official cars within their system.

Article 8. (1) The Ministry of Machine Building is to produce 5,000 heat-storing electrical heaters in 1979 and 25,000 in 1980.

(2) The Ministry of Electronics and Electrical Engineering is to provide for the production of:

1. 5,000 heat-storing electric heaters before 1 September 1980 and 30,000 from 1980;
2. The necessary amount of low-power electric lights.

(3) The Ministry of Metallurgy and Mineral Resources, the Ministry of Construction and Building Materials and the Ministry of Electronics and Electrical Engineering are to provide the required refractories and other materials and sets for the production of the heat-storing electric heaters. The State Planning Committee is to provide the funds for importing the necessary equipment.

Article 9. The National Agroindustrial Union is to reduce the use of liquid fuels in hothouse production, in improving the production structure, introducing other heat sources and reducing the hothouse area. The chairman of the National Agroindustrial Union is to report on the results to the State Planning Committee prior to 30 September 1979.

Article 10. The Ministry of Power Supply in 1980 is to deliver an additional 60,000 tons of brown coal for market stocks, and the Ministry of Forests and Forest Industry will provide 50,000 m³ of fire wood.

Article 11. The Ministry of Transport, the Ministry of Power Supply and the Ministry of Internal Trade and Public Services prior to 30 June 1979 are to work out a program for a decisive improvement in the transporting and storage of briquettes for the purpose of maintaining their quality indicators and ensuring their delivery to all the population points of the nation.

Article 12. (1) Under all the ministries, other departments, economic organizations and divisions in their systems to create units which are responsible for energy conservation and for improving the energy efficiency of their production activities.

(2) The State Planning Committee, upon the proposal of the ministries and other departments, with the agreement of the Ministry of Power Supply, is to give approval for increasing the limits set by it for the number of administrative, management, scientific-technical and design personnel for 1979 and 1980 within the limits set by it for the overall number of personnel.

Article 13. (1) The changes in the limits for coal, liquid fuels and natural gas for 1979 and 1980 are to be approved.

(2) The ministries, other departments, executive committees of the okrug people's councils and the Sofia Obshtina People's Council and public organizations, prior to 31 May 1979, are to allocate the reduced limits according to the previous paragraph among the economic organizations, divisions, enterprises and so forth and according to the quarter, and are to adjust the consumption standards prior to 15 June 1979. The new consumption standards are to be submitted to the State Planning Committee prior to 30 June 1979.

(3) All the enterprises which use thermal energy (steam or hot water) from outside thermal sources produced on the basis of liquid fuels and natural gas are to reduce the agreed upon annual quantities of fuel by 10 percent.

Article 14. The Main Price Administration under the State Planning Committee and the Ministry of Power Supply prior to 15 June 1979 are to determine the price for the condensate not returned to the heating sources, and this will encourage the return of the maximum possible quantity of it.

Article 15. (1) The State Planning Committee is to reduce the limit set for gas oil for 1979 by 20 percent for the needs of the public, public organizations, schools, hospitals and other institutions. The limits for electric power are to be set on the 1978 level.

(2) The Ministry of Power Supply prior to 1 July 1979 is to set the limits for the consumption of electric power by the public, and the Ministry of Chemical Industry for gas oil.

(3) The electric power consumed above the stipulated limits is to be paid for by the public at a rate of 3.2 stotniks per kilowatt hour, and for the gas oil, 24 stotniks per liter. The entire amount of electric power consumed in private workshops is to be paid for at a rate of 3.2 stotniks per kilowatt hour.

(4) As of 21 May 1979, the retail price for gasoline for sale to the public is to be set as follows: 1 lev per liter for the 96 [octane] gasoline; 0.80 lev per liter for the 93 gasoline; 0.70 lev per liter for the 83 gasoline; 0.40 lev per liter for the transport diesel fuel.

(5) The sale of liquid fuels to foreign motor tourists and for trucks is to be carried out at the prices of the preceding paragraph. The previous sales procedure is to be maintained for organized foreign motor tourists.

(6) The previous prices are to be maintained for petroleum products supplied to the departments, the state and social organizations.

(7) Questions arising on the application of the new prices are to be settled by the Main Price Administration under the State Planning Committee.

Article 16. (1) With a shortage of liquid fuels, private vehicles are to be used outside population points on weekends.

(2) The Ministry of Internal Affairs is to establish the procedure for applying the previous paragraph and is to promptly inform the citizens.

Article 17. (1) The ministries, other departments and executive committees of the okrug people's councils and the Sofia Obshtina People's Council are to calculate the value of the saved fuel from reducing the consumption rates. The money is to go into the development and technical improvement fund and is to be spend on introducing specific measures leading to a rise in energy efficiency and for encouraging the personnel to save energy resources.

(2) Under the State Planning Committee a permanent work group is to be set up with the participation of the representatives of the Ministry of Power Supply, the Bulgarian National Bank and the Ministry of Foreign Trade, and this is to review proposals on saving energy and fuel, and permits the importing of special materials and equipment.

Article 18. (1) The leaders of the ministries, other departments, economic organizations, the agroindustrial complexes, the bodies of the Ministry of Internal Affairs and other control bodies are to take measures to correctly apply the provisions of this decree and to prevent possible abuses of liquid fuels.

(2) The Ministry of Chemical Industry, the Ministry of Finances and the Ministry of Internal Affairs prior to 30 May 1979 are to propose a more efficient system for the sale of petroleum products to be approved by the Bureau of the Council of Ministers.

(3) The Ministry of Chemical Industry, the Committee for the Unified System of Social Information, all the ministries and other departments, the executive committees of the okrug people's councils and the Sofia Obshtina People's Council are to calculate the actually sold and consumed quantities of liquid fuels by all consumers in the nation.

Article 19. (1) As of 1 July 1979, under the Ministry of Power Supply the Industrial Power Engineering Scientific Production Combine [NPK] is to be formed with a separate legal entity and headquarters, and with activities and personnel in accord with the appendix.

(2) The composition of the Industrial Power Engineering NPK is to include the Industrial Power Engineering Scientific Research and Design Institute in Sofia, and this will be organized on the basis of the Napolos Scientific Production Laboratory and the Industrial Power Engineering Section under the Scientific Research Planning and Design Institute for Power Systems with the following activities: Engineering and introduction activities in the area of industrial power engineering, power engineering of the municipal services, installations for utilizing solar and geothermal energy, secondary energy resources and waste heat.

(3) Point 7 of the Order No 52 of the Bureau of the Council of Ministers of 1977 is to be used for the personnel of the Napolos Scientific Production Laboratory prior to the application of the Uniform Personnel Schedule approved by the Decree No 5 of the BCP Central Committee, the Council of Ministers and the Central Council of Bulgarian Trade Unions of 1977 (DURZHAVEN VESTNIK, No 19, 1977).

(4) The Ministry of Power Supply, with the approval of the State Planning Committee, is to introduce for approval prior to 15 June 1979 a program for the accelerated construction of production facilities for the Industrial Power Engineering NPK.

Article 20. The State Planning Committee is to reflect in the plan the changes stemming from this decree.

Article 21. The leaders of the ministries, the other departments, the executive committees of the okrug people's councils and the Sofia Obshtina People's Council, the economic and public organizations bear personal responsibility for the fulfillment of the decree.

Article 22. Supervision over the complete execution of the decree is entrusted to the Ministry of Power Supply, the Ministry of Chemical Industry and the Committee for State and People's Control.

The Council of Ministers expressed confidence that the workers and specialists in the enterprises, economic organizations, institutions and all workers will turn the task of the thrifty and rational use of energy resources into a nationwide cause, and will discover new opportunities for decisively

reducing the consumption of fuel and power, for increasing economic efficiency, and for raising the standard of living.

Chairman of the Council of Ministers:
St. Todorov

Chief Secretary of the Council of Ministers:
Iv. Shpatov

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BULGARIA

MINISTER DISCUSSES WAYS TO SAVE ENERGY, FUEL

Sofia *TEKHNIЧЕСКО ДЕЛО* in Bulgarian 15 Sep 79 pp 1-12

[Article by Corresponding Member Prof Nikola Todoriev minister of power supply: "Increasing the Power Effectiveness of the National Economy"]

[Text] The 11th BCP Congress and the National Party Conference indicated that raising the socialist organization of labor to a qualitatively new level, consistent with the development of production forces in our country, was one of the basic directions in our future economic development. One of the main elements of the new socialist organization of labor is the effective utilization of materialized labor, i.e., of raw materials, materials, fuels, and energy.

The problems related to upgrading the power effectiveness of the economy play a particularly important role in this task. Their solution was entrusted to the National Energy Complex whose purpose is to satisfy in full, qualitatively, and uninterruptedly, the requirements for power and fuels of the national economy and the population.

The National Energy Complex is developing in the following basic directions:

Maximum Utilization of Local Energy Resources

We know that our country does not have substantial deposits of liquid fuels and natural gas. We have relatively limited stocks of solid fuel, over 80 percent of which consists of low caloric lignite coal with high inert constituents. Despite this, however, coal extraction is developing at a faster pace. Compared with the end of the sixth five-year plan (1975) it will be about 25 percent higher in 1980, 60 percent higher in 1985, and about 100 percent higher by 1990.

The effective utilization of most of our coal could be achieved with high concentration of capacities located close to the extraction sites. That is why the bulk of the extracted coal goes to big thermoelectric power plants which produce electric power and heat. The Maritsa-Iztok 3 TETs [Thermoelectric Power Plant] is being built on the basis of the lignite mine at Maritsa-Iztok Basin. Its full capacity of 840 megawatts will be reached at

the beginning of the next five-year plan. An original Bulgarian technology for the burning of lignites with high inert constituents without preliminary drying will be used for the first time in this TETs. This makes it possible to lower specific fuel outlays for the production of electric power by about nine percent. On the basis of the same principle, by 1985 the Maritsa-Iztok 2 and the Purva Komsomolska TETs will be reconstructed and expanded; in the more distant future it will be applied in the building of the Maritsa-Iztok 4 TETs, whose turbines will develop a 500 megawatt capacity each. Furthermore, in order to supply with heat on a centralized basis those industry and the population, in 1987-1988 big TETs will be constructed for the combined production of electric power and heat for industrial and residential purposes in Khaskovo, Stara Zagora, Yambol, and Pazardzhik, burning lignite.

Furthermore, we are planning the increased production of concentrated soft coal, and better quality lignites and briquettes for the needs of small industrial and domestic consumers, as well as for combined heat sources providing centralized heat supplies to smaller industrial complexes and settlements.

A special program has been formulated to study possibilities for the comprehensive utilization of the coal in some deposits, including the production of liquid and gas fuels.

Development of the Nuclear Energy

The lack of significant reserves of high quality fuels in our country requires, along with the maximum utilization of local coal, the rapid development of the nuclear power industry. The production of power by AETs [Nuclear Electric Power Plants] will be achieved with the expansion of the Kozloduy AETs and the building of new and even bigger condensation AETs. In the more distant future, toward 1990 and subsequently, a heat producing AETs is planned to provide centralized heat supplies to industry and the population.

Upgrading the Effectiveness of Power Consumption in Material Production and the Communal-Consumer Sector

In general, the consumption of power and fuels in our country is consistent with the overall economic development of the country. As a result of this, over the past 25 years (since 1953) overall power consumption has risen by a factor of over 7. In 1978 it exceeded 42 million tons of conventional fuel. In 1960 the specific per capita energy consumption in our country was nine percent below the average specific power consumption in the world. In 1975 it had doubled. This five-year plan Bulgaria took its place among the advanced countries in terms of this indicator. The development of power consumption was accompanied by considerable changes in its structure. Above all, the consumption of liquid fuels rose very rapidly. In the course of one-quarter of a century it increased by a factor of 52. In 1977 about 45 percent of the power consumption came from liquid fuels. At the same time electric power consumption in the country rose considerably. Between 1955

and 1975 the consumption of electric power in Bulgaria rose by a factor of almost 14.

The rapid increase in power consumption resulted in the building of a large number of power transforming and utilizing systems and installations in all national economic sectors, quite varied in terms of purpose, capacity, technological standard, and operational qualities. Priority was given to supplying on time the production process with the necessary power resources in terms of quantity. Until 1972-1973 problems of the effective utilization of fuels and energy were considered in our country to be secondary. As a result of this the overall energy effectiveness remains low. The development of our productive capital gives us the realistic possibility to increase the power effectiveness of the national economy by about 10 percent over the next 8 to 10 years. This means reducing outlays of primary power resources by about four million tons of conventional fuel toward 1985, compared with initial forecasts, and by about 6.5 million tons of conventional fuel by 1990, regardless of the ever rising share of electric power in the power balance of the country.

In 1976 nationwide activities aimed at upgrading power effectiveness reached a higher level following the formulation and approval by the Council of Ministers of a national program for the effective utilization of material resources in the seventh five-year plan. Measures aimed at saving fuel and power resources in industry, transportation, construction, and agriculture account for most of the program. As the result of the implementation of the program, by the end of 1978 the national economy had saved 1 billion 100 million kilowatt hours of electric power, over 1,100,000 tons of gasoline, about 220,000 tons of diesel fuel, 900,000 tons of fuel oil, and 1.2 million tons of coal. The program is being successfully implemented in 1979 as well.

However, the achieved reduction of power consumption hardly exhausts all possibilities in this respect. On this basis, and bearing in mind the great complications which developed in recent years on the international market of power resources, through a number of laws the Bulgarian Council of Ministers stipulated additional reductions in the use of essentially liquid fuels and electric power by 5-10 percent in material production and the communal-consumer sector. These decrees stipulated the basic measures through which power consumption is to be reduced along with changes in its structure aimed at the maximum utilization of local fuels.

In the future the movement for fuel and power economy will continue to develop in all activities related to the consumption of power resources, including the communal-consumer sector. Such activities will be developed on the basis of improving the organization of power-intensive labor and increasing accountability and control over the expenditure of fuel-power resources. An essential aspect of such activities is the introduction of systems for automated control of power intensive processes. This will require the increased production and availability of control-measuring equip-

ment and means for automatic power consumption control. Such activities require relatively small expenditures and, in most cases, could be accomplished by the individual enterprises and combines themselves.

The exceptionally large number of power consuming and transforming installations and systems in industry and the lack of properly skilled personnel, particularly in the smaller enterprises, result in the improper operation and maintenance of such equipment and considerably lower their effectiveness. For example, we have over 3,200 industrial steam boilers, some 2,000 of which use liquid fuel. Their average annual efficiency is 5 to 30 percent below nominal. The effectiveness of the utilization of fuels in Bulgarian industrial furnaces (over 850) is 10-35 percent below planned capacity. Incomplete use is being made of thermal energy in the canning, textile, and ceramic industries, the production of construction elements, etc. A general shortcoming of the heat-utilizing industry in our country is the extremely poor condition of condensation facilities. For this reason every year huge quantities of condensate (about 20 million tons) are lost. The result is an overexpenditure of fuel totaling about 220,000 tons of conventional fuel, 70 percent of which is liquid. In the field of industrial electric power consumption the situation is no better, as a result of which electric power losses exceed admissible levels.

With a view to restoring and maintaining competently the nominal power effectiveness of industrial equipment and installations, and carry out expedient reconstructions, modernizations, and consolidations of industrial power resources, starting with 1978 the Ministry of Power Supply set up in its economic combines specialized "Industrial Power Supply" units. Their task is to carry out system organization projects, repairs, reconstructions, and modernizations of industrial power equipment. As of 1 July 1979, the Industrial Power Supply Scientific-Production Combine was set up to carry out the same activities and the related scientific and design services and production of spares parts, elements, assemblies, and one-of-a-kind and nonstandard equipment in the field of industrial and consumer power industry.

As a result of the activities of the combine the expected lowering of outlays of fuel-power resources will be about 290,000 tons of conventional fuel in 1980, 1.2 million in 1985, and about 3 million in 1990.

Secondary Power Resources are an Important Reserve

An essential reserve for the satisfaction of industrial and consumer needs for high potential heat and therefore, for reducing the consumption of primary power resources may be found in the so-called secondary power resources. Substantial quantities of combustible liquids and gases, high temperature gases and liquids, etc., are released in a number of production processes. Preliminary estimates indicate that the utilization of the energy they contain could satisfy four to five percent of the energy requirements of industrial enterprises mainly in terms of steam and hot water.

Certain successes have already been achieved in our country in this area. About 90 percent of the steam and hot water required at the Lenin Metallurgical Combine come from secondary resources. A system for evaporation cooling of some furnaces is being introduced in nonferrous metallurgical enterprises. Since the beginning of 1979 a hot water system using the heat radiated by a bath furnace has been in operation at the Dyanko Stefanov Glassware Plant. The use of secondary power resources is related to the supply and production of a wide variety of utilizing equipment and installations which have not been mastered so far in Bulgaria.

In order to ensure the rationalization of electric power consumption in the country mainly by equalizing the 24-hour load of the electric power system, as of 1978 the Ministry of Electrification has been introducing a controlling electric power consumption system in industrial enterprises. We must point out that this is a long-term policy in the field of electric power supplies, resulting in considerable savings of capital investments required for the building of peak generating capacities and of fuel as a result of lowering the share of conversion systems in the work of electric power generating capacities. For the same purpose, starting with 1 April 1979, Bulgaria introduced summer daylight saving time, which lowers the evening consumption peak of electric power by 250 to 350 megawatts. At the same time, electric power totaling 15-20 million kilowatt hours monthly is economized.

The role of nonconventional sources of energy--mainly solar and geothermal--in the power balance of the country will be increased further and further.

The rationalization of the structure and the increased effectiveness of power consumption is a primary task facing all economic managers, labor collectives, specialists, and workers, and every Bulgarian citizen. The successful solution of this problem will influence to the greatest extent the overall socioeconomic development of the country.

5003

CSO: 2200

BULGARIA

SHORTAGE OF MANPOWER IN AGRICULTURE CAUSES CONCERN

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 3 Oct 79 p 12

[Article by Atanas Bayryamov, senior scientific associate, NIIOSS [Scientific Research Institute For the Organization of Agriculture]: "Manpower Stabilization is an Important Task"]

[Text] As the result of the migration and other forms of population dynamics, substantial changes have taken place in the numerical and qualitative structure of persons engaged in production and in their utilization. They are characterized above all by the steady and uneven decline of people employed in agriculture. The data show that the most substantial reduction has taken place in age groups under 40.

The studies have shown that some of the necessary manpower as well has abandoned agriculture. This decline in the number of people employed in this sector has brought about substantial structural changes in agricultural manpower and in the structure of the entire active population of the country. The share of people engaged in agriculture declined from 81.9 percent in 1948 to 26.2 percent in 1977.

Changes have occurred in the age structure as well. At the end of 1975 people under 40 years of age employed in agriculture accounted for 39.5 percent. This group includes 61.1 percent of those employed in industry and 56.6 percent in construction. IN the active rural population not employed in agriculture the group under 40 accounts for 57.2 percent.

The manpower structure is unfavorable in terms of sex as well: women account for over 60 percent of the 16 to 40-year-old groups; in the pre-retirement age group women account for over 50 percent. This proves that the migration of the male population from the countryside to the cities is taking place at a higher pace.

Most of the migrants have higher skills and a higher educational standard. Even though it is a steady process, the rising of the educational level of people employed in agriculture remains insufficient compared with the other sectors.

Unquestionably, the rapid industrialization of agricultural production requires a faster quantitative and qualitative growth of agricultural cadres. Two essential aspects must be taken into consideration here, namely:

- A number of positions and jobs requiring higher skills are now held by less skilled workers. Their skills must be rapidly upgraded and, wherever expedient, such workers must be replaced by more skilled cadres.
- The projected available manpower will be unable to meet the entire need for properly skilled individuals. For this reason, as of now we must formulate and implement a system of measures for the timely recruitment, training, and retaining the necessary cadres.

The reduction in the number of those employed and the worsening of their age (and sex) structure lead to a steady worsening of the manpower potential. At the same time, high annual employment has been achieved. Studies have determined that the average annual employment rose as follows: 1965, 222 man/days; 1970, 251; and 1975, 271. The effective utilization of manpower resources and labor productivity have risen as well.

Let us note, however, that substantial disparities exist in the pace. In terms of daily labor productivity the pace is lower compared with the annual per capita labor productivity. It is obvious that the labor spent did not bring about the most effective utilization of remaining resources and was not applied most expediently. The observance of these important requirements would have led to far greater effectiveness in the utilization of manpower resources.

Let us note that manpower losses are still allowed to occur in agriculture as the result of improper manpower distribution, waste of labor, and inexpedient and incomplete utilization of the working time. This occurs both in the winter and summer seasons.

The main conclusion is that the labor potential in agriculture has considerably worsened in terms of quantity and, particularly, quality. The intensification of this trend will have an adverse effect on the further industrialization of this sector. That is why, in August 1978 the BCP Central Committee Politburo passed a decision and the Council of Ministers passed the decree "On the Further Stabilization of Manpower in Agriculture, Strengthening Primary Production Units with Leading and Performing Cadres, and Increasing the Participation of the Youth in Agricultural Production." The implementation of the decree and of the decisions of the March 1979 BCP Central Committee Plenum should bring about a limitation and termination of the process of worsening the manpower potential in this important sector and manpower stabilization.

The implementation of the party's strategic slogan of achieving high effectiveness and high quality in agricultural production involves the

overall stabilization of the necessary manpower in terms of number, structure, age group, and sex, and the rational utilization of the work of all employed persons.

The NAPS [National Agroindustrial Union] currently faces the task of decisively increasing the number of young people through the systematic channeling of their movements and recruiting on the outside the required number of people, along with the stabilization of the manpower. The task is to strengthen all production and other units with skilled management and performing cadres.

Along with the making of a profound study of the condition of manpower resources and cadres, we must elaborate and implement a comprehensive system of measures in accordance with those earmarked in Council Ministers letter No 49, with their concrete and detailed breakdown. Priority must be given to socioeconomic and cultural-living problems without underestimating organizational-economic problems. Particularly important among them are the following:

- Redirecting a certain percentage of the administrative-managerial personnel (people with proper skills) to material production in the complexes;
- Organizing Komsomol calls for the participation of young people in agricultural production;
- Redistribution of a certain percentage of people employed outside agriculture;
- Cooperation among socialist countries with a view to the transfer and utilization of skilled individuals during periods of stress, campaigns, etc.

The specific measures may be classified in the following directions and groups:

- The first group must include measures related to the proportional and the systematic application of manpower resources among our national economic sectors in accordance with sectorial requirements;
- The second group consists of measures contributing to reaching substantial improvements in production and labor conditions and substantially changing the content and nature of farm work. They are related to the maximal development and highly effective utilization of the material and technical base, the introduction of industrial production methods, etc. On the other hand, such measures are related to the training of necessary cadres, based on skills, proper distribution and settling of cadres, providing prompt help, and expediently utilizing their labor. This also includes the use of proper working and resting systems in the multiple-shift utilization of the equip-

ment, expanding the combination of skills, and proper allocation and implementation of functions and responsibilities. Such measures should include the regulating of the work by profession, skill, and position, acquainting the young people with expected professional and social changes in the various types of work, enhancing the prestige of the various professions, etc.;

- The third group of measures deals with rapidly surmounting the economic and social disparities among those employed in agriculture and between them and those employed in other national economic sectors. It is a question of a highly effective development of the production process and ensuring "equal pay for equal work" by improving norming, rating, and grading of the various types of work and wage methods and systems. Also important in this connection is the problem of using proper ratios in wages paid for various types of farm labor, converting to a shorter work time and rapidly surmounting major disparities in labor, living standards, socioclass structure, the spiritual aspect of life, etc.;

- The fourth group of measures deals with achieving the highly effective utilization of manpower resources on the basis of the acceleration and intensification of output in farms and complexes, the expansion of integration relations with the food industry, the application of a scientific organization of production, labor, and management, combination of agricultural sectors and of agriculture with other sectors and activities, etc.;

- The fifth group of measures deals with rapidly surmounting major disparities in living, resting, and entertainment conditions among individual settlements. Public services must be developed at a faster pace. Architectural-urban and social plans must be formulated and implemented for the development of the farms, complexes, settlements, and settlement systems.

It is also very important to develop healthy and united labor collectives with a good socio-psychological climate, to improve the information base, and formulate a system of manpower balances based on a single method, with a view to ensuring the proper planning and effective utilization of manpower resources.

The implementation of all such measures must be conducted on a comprehensive basis. However, in order to make them effective, it is absolutely necessary to correlate them by year and five-year plan with the existing material, financial, and other means as stipulated in the plan. The system of measures will be formulated and implemented on the level of the complex-settlement system-okrug-country.

5003

CSO: 2200

CONSUMER GOODS SHORTFALLS NOTED

Prague HOSPODARSKE NOVINY in Czech 21 Sep 79 p 4

[Article by Engr Jan Pipal, head of the Department for Trade, Services, Transportation and Communications at the Chancellery of CSSR Government Presidium: "Mirror of Supply and Demand"]

[Text] Two years after the Seventh Session of the CTCZ Central Committee it has become clear that the detailing of resolutions and setting of tasks at all levels of management--from production and trade organizations all the way up to the ministries and other central agencies, including the federal and national governments--aroused greater attention to the problems of the domestic market and needs of the population. The discussion of respective tasks and checks on their fulfillment by the kraj and okres party committees and party organizations as well as by the kraj and okres national committees lent important political support to this action.

In recent years, we have succeeded in achieving further dynamic growth of individual consumption which, in terms of retail trade turnover, has shown, in comparison with the last year of the Fifth Five-Year Plan, the following trend:

TABLE I

	1975	1976	1977	1978	1979 (projected)
Kcs in billions	212.3	220.2	229.-	241.4	247.0
1975 index = 100	100.-	103.7	107.9	113.7	116.3
Chain index	100.-	103.7	104.-	105.4	102.3

The organization of local industry and producer cooperatives also achieved favorable results in the first 3 years of the Sixth Five-Year Plan: the receipts from the population increased by 3.7 percent and the shipments of goods to the market funds from this sector of the national economy surpassed the plan targets by 4 percent in 1976, by 3.6 percent in 1977 and by 3.9

percent in 1978--the overall increase amounting to 16.1 percent during the 1976-1978 period.

Shortages Persist

On the basis of these overall data it would seem that everything is in order. It is, however, obvious that the strengthening of social securities and the changes in the lifestyle of our society are reflected in the steadily higher demands for choice and quality of goods. This development is logical: demand is not a static, but a dynamic phenomenon which is formed on a constantly higher qualitative level of individual needs. Yet, in contrast to the development of individual market consumption during the Fifth Five-Year Plan, the fulfillment of tasks of the Sixth Five-Year Plan is substantially more complex. The reasons for it are to be found not only in the general domestic and external economic conditions--further exacerbated by unfavorable weather in the winter period and drought last May--but also in the extreme fluctuation of prices of some imported raw materials.

All these influences combined were primarily responsible for the fact that, despite the big increase in individual market consumption, there has been no radical qualitative change in the market supply. A number of shortages criticized at the Seventh Session of the CPCZ Central Committee still persist. Due to this situation, the retail turnover continues to increase, but its rate is lower than the directives of the Sixth Five-Year Plan specified. Despite the increased receipts in the last 2 months, the retail turnover was fulfilled 100.6 percent during the January-August period.

In other words, the entire course of this year has again confirmed the correctness of conclusions from the checks on the implementation of tasks laid down by the Seventh Session of the CPCZ Central Committee as well as some previous resolutions of the CSSR Government which urged the production sectors and trade to carry out the deliveries of goods to the market funds unconditionally in the planned amount. The smooth flow of supply of some types of goods to the domestic market has been disrupted by the declining volume and inappropriate structure of inventories in regard to some items of industrial goods. The present scope, in terms of funds and structure, of meeting the demands of domestic market, however, reveals that we have still not succeeded in controlling the trend in the proportion between the sale of food and industrial goods.

Not only the volume, but particularly the assortment of consumer goods, their technical standard and quality together with the scope and prompt availability of services (service, repairs and so on) have not created so far sufficient and effective room for a more rational control of consumption structure. The unsatisfied demand for industrial goods have resulted in the increased demand for certain food items, particularly meat and meat products and others. It has become clear that even the small slowdown of incomes increase and thus also of the total turnover on the market has not reduced the sale of food.

Shortages Caused by Production

Already for a long time, we have not been able to provide sufficient goods for the structural fulfillment of the plan of retail trade turnover and for satisfaction of the population's needs prior to the beginning of the calendar planning year. The negotiations between suppliers and customers drag into the period, when provisions should be already available for backing up the next year's plan of retail turnover. An unsatisfactory situation in this respect has existed particularly this year because the failure to sign on time contracts for shipments from the production sector and imports has resulted in recurrent shortages of the same goods on the market.

Shortages are particularly severe in regard to meat and meat products, some types of garments and textile goods including children's clothing, and goods for household, sport and recreation. The imbalance persists in individual sizes, new fashionable designs, but also in the introduction of new products to the domestic market. This year for example, 16 new products in the value of Kcs 1.3 billion should have been delivered to the domestic market by the production organizations of general engineering. Instead, only seven products were delivered in the value of Kcs 0.35 billion.

Some results have been achieved in deliveries of new products from the enterprises of local industry and producer cooperatives, but even these deliveries are not in the quantities and structure required by the ministries of trade. Inadequate innovation of goods for the domestic market has been among other things due to the ineffective use of the scientific-technological base and underestimation of license policy. The dissatisfaction of consumers is sometimes caused by the inferior quality of goods as has been confirmed for example by numerous findings of control organs and a number of sanctions applied to the suppliers.

The paid for services also account to a considerable extent for satisfaction of the population's needs. Yet, despite relatively good results which the enterprises of local industry and producer cooperatives have achieved in this area in recent years, it will be necessary to make greater effort in compelling them to consistently discharge the basic mission of these organizations, that is providing service to the public. The satisfaction with the standard of service is frequently lessened by their inferior quality, extraordinarily long delivery dates, inconvenient working hours and so on. Likewise, the share of receipts from individuals and of deliveries of goods, for the diversification of the market, continues to be too small in the total output by the enterprises of local industry and producer cooperatives and the possibilities are far from being exhausted. A serious problem still is the deliveries of raw materials and spare parts, both for repair shops and production, to the market funds.

Consistently and Comprehensively

The control report discussed by the CSSR Government Presidium therefore stressed again the necessity of consistent implementation and fulfillment of measures

called for by the Seventh Session of the CPCZ Central Committee, and their long-term validity for meeting the needs of the domestic market.

The CSSR Government and its presidium discussed already in the past a number of measures designed for example to increase market supply of textile goods and garments, shoes, furniture, building materials, articles for cultural needs, sport and tourism; to speed up innovation of consumer goods even by purchase of licenses; to speed up development of selected types of consumer durable goods and to increase production of some types of goods now in short supply; to increase production, quality and accelerate the implementation of the program of innovation of food items, and so on.

A similar procedure was followed also by the state governments. They, for example, discussed a complex of measures designed to stabilize labor force in trade, to finance services and so on. One of the most important long-term measures designed to consolidate planned management of branches and uniform system of consumer protection is the proposal, now in preparation, for new regulations in domestic trade.

There are a number of problems, however, which must be solved during this five-year plan and preparation of the Seventh Five-Year Plan such as the methods of and approaches to the system of improved planned management of trade and trade policy from the center all the way down to production and trade organizations. More effective use must be made of market research and forecasting of demand, of improvement of supplier-customer relations between production and trade, economic tools of the plan, distribution and rational administration of commodity supplies and so on.

Likewise, it is not always possible to demand that new measures in the production sector be backed up with increases in investments, material and labor force. Big reserves exist in management and organization, in the organization of routing goods including the elimination of intermediate stages, in the improvement of deliveries and shortening the supplier cycle. Considerable economic losses, including the reduction of the effect of active trade policy, are caused also by the fact that the criteria of social effectiveness and satisfaction of actual needs of people are often subordinated to the criteria of manufacturers' profitability.

Consumer Protection

One of the most urgent problems is the increase in quality of manufactured goods, including the deliveries to the domestic market, the improvement of programs of innovation of consumer goods, and the increase in supply of fashionable products and articles with high technical and functional parameters. The proposals of respective ministries for innovation programs will be studied by the CSSR Government Presidium again this year.

Consumer protection remains a permanently urgent task. This is a task faced both by production enterprises and trade and services. In the first place, it is imperative to eliminate the disproportions between supply and demand on

domestic market as well as all forms of damage to the consumer and socialist property. This calls for systematic checks by management and imposing severe sanctions for the noncompliance with or violation of specified principles.

Achieving a better structure in the deliveries of goods, the increase in quality, speeding up of the innovation process, improvement of useful properties of products and so on are the fundamental requirements for remedying the situation on the domestic market. Coping with these tasks by production, trade and services must be permanently the basic criterion of the political approach to the implementation of the economic guideline laid down by the Seventh Session of the CPCZ Central Committee.

The resolution of the CSSR Government Presidium of June 1979 regarding the checks on the implementation of resolutions of the Seventh Session of the CPCZ Central Committee emphasized the urgency of completing the still unfinished tasks by all responsible central organs, production and trade organizations, and the necessity of insuring the deliveries of goods planned for 1979 and 1980 in the required assortment structure and quality, and of incorporating the resolutions of the Seventh Session of the CPCZ Central Committee in the draft of the Seventh Five-Year Plan.

10501

CSO: 2400

EXPERIMENT INCREASES PERCENTAGE OF ZERO-DEFECT PRODUCTS

Kosice VYCHODOSLOVENSKE NOVINY in Slovak 12 Sep 79 p 1,2

/Article by Engr Valeria Horvatova, Okres Branch of Slovak Statistical Office, Humenne: "Observations from Implementation of Comprehensive Experiment--Chemlon's Decisive Procedure"/

/Text/ Dynamic of Production Growth Highest in Okres--Increased Proportion of Specific Output--Almost Three-Fourths of Products of First Grade Quality

One of the main goals prescribed by the 15th Congress of the CPCZ for the period of the Sixth Five-Year Plan was to develop and improve the management of the national economy in order to more effectively insure increased efficiency, mobilize reserves, stimulate the growth of labor productivity, and raise the quality of production, creative forces and workers' initiative. The implementation of a comprehensive experiment in controlling the efficiency and quality of production should help achieve these goals. The experiment is based largely on current plan indicators but also encompasses certain new indicators--for example specific output.

In Humenne okres the experiment is being conducted in the Chemlon enterprise which belongs to the Slovchemia VHJ /Economic Production Unit/. In the first 6 months following the start of the experiment the dynamic of growth of production in the enterprise exceeded the tempo of the entire okres.

In the indicator of specific output which contributes to eliminating undesirable cooperation among enterprises and reduces material-demanding production the plan was exceeded by 1.9 percent and compared with last year's actually by almost 16 percent.

Provisions of the experiment are directed toward gradual elimination of negative features and increasing the effectiveness of methods stipulating the growth of efficiency and quality.

An important stimulus influencing the development of quality is the cost advantage of products classed as first grade or between deluxe and the latest styles. On the other hand, the enterprise is penalized for unsatisfactory products. It should be noted that these stimuli did not have to be applied at the Chemlon National Enterprise during the first half-year.

Of the entire volume of factory production evaluated by state testing facilities, 73.8 percent of the products were rated as first grade quality, which is a 4 percent increase over the same period last year.

In the area of marketing the experiment focuses on fulfilling the plan for the final market and its economic aspects, especially with respect to exports. The value of sales in Chemlon reached over Kcs 1.2 billion which is an increase of 11.8 percent over last year's figures. Deliveries for investment and for export were greatly exceeded. In addition, the enterprise exceeded planned earning capacity by 3 percent which is one-third more than in the past year.

The main factor which favorably influenced the development of earning capacity was an increase of over 29 percent in profits. Among the critical factors contributing to the growth of the economic results is the reduction of material-demanding production. The proportion of material expenditures in respect to output was reduced by 0.67 percent compared with the plan. The utilization of production reserves, especially supplies, can also be assessed positively.

The successes achieved by Chemlon in Humenne demonstrate that the comprehensive experiment in controlling efficiency and quality has a very positive influence on efforts to improve management in our national economy.

8491

CSO: 2400

FRG JOURNAL ANALYZES GDR ECONOMY AT 30-YEAR MARK

Duesseldorf WIRTSCHAFTSWOCHE in German Vol 33 No 41, 8 Oct 79 pp 54-55, 57-58, 60, 62, 65-68, 70-71

[Title story] on the occasion of the GDR's 30th anniversary: "Now Come the Lean Years"]

[Text] Last Sunday [7 October 1979] the German Democratic Republic celebrated its 30th anniversary. The first socialist state on German soil enters the new decade with old problems: Public consumer needs cannot be satisfied, investments in the economy are insufficient. The rigid planning system prevents the difficulties from being overcome. Nevertheless an attempt is under way to obtain greater flexibility for the planned economy. Initial successes are proudly proclaimed.

"It is no longer possible to imagine a world without the GDR," said SED General Secretary Erich Honecker in his article celebrating the 30th anniversary of his country's establishment. In his opinion "socialism has proved its superiority over capitalism on German soil also."

In their half year report even the statisticians, usually a rather sober breed, enthused that the working people were making every effort to make of the anniversary "a major exhibition of socialist performance on German soil." The customary propaganda bombast serves as a constant inspiration to political wit. Back at the 25th anniversary the following joke made the rounds: "Question to Radio Eriwan: Is it true that the GDR is driving full steam ahead toward socialism? Answer: Theoretically it does, but 90 percent of the steam are used to blow the whistle."

Now, 5 years later, even the comedians no longer believe that 10 percent at least of the steam go to propel the GDR. Current jokes run like this: "A train carrying senior functionaries must stop in the middle of nowhere because the track ends. A Leninist recommends taking up the rails behind the train and laying them ahead of it. The Stalinists vote for liquidating the

train personnel. As for Honecker, he yells: All comrades get out and shake the cars so that the independents may not notice that we are no longer moving."

In fact economic growth has approached zero precisely in this, the anniversary year. In the first 6 months of 1979 the produced national income rose by only about 2 percent compared to 5 percent in the same period of last year. The German Institute for Economic Research (DIW), domiciled in West Berlin, produced that calculation. In its half yearly report the Central State Administration for Statistics in East Berlin preferred not even to mention the produced national income, the most important plan index figure.

The DIW points out a source of special anxiety for the East Berlin government economists: "Lacking once again is the balance between the supplies available and the demand backed by purchasing power, which had begun to fail in 1977 at the time social security pensions were raised."

In the meantime the growth doldrums have been overcome. In late September Honecker announced that the 1979 national income would amount to "about M170 billion." If he is talking of the national product, this would correspond to a 5.6 percent growth rate. The plan provided for 4.3 percent. Nevertheless, in the months preceding the anniversary the public mood was anything but jubilant. That was due to quite objective reasons: GDR citizens were by no means satisfied with the supplies offered on the market. On the other hand the constant and strident propaganda has gradually led to public deafness so that even justified claims to success are largely discounted.

The early days of the GDR were burdened not only with the destruction the war had wrought and the losses suffered; added to these was the looting in the first postwar months, the disassemblies and reparations which had to come from current production. The territory of the present-day GDR was also disadvantaged by the fact that its occupation forces came from the least industrialized but most heavily war damaged nation among the victorious powers.

The former Federal Ministry of All-German Affairs estimated at \$26.5 billion (calculating the U.S.dollar at DM2.50) the total of all values the USSR obtained from the Soviet zone of occupation and later the GDR. This bloodletting affected an economy which, by the use of Stalinist methods, was radically converted from capitalism to socialism. Granted, these burdens are discernible only to Western eyes. Communists accept the official data provided by Moscow and East Berlin.

According to these data the Soviet Union obtained reparation for wartime damage in the amount of only \$3.75 billion. Furthermore communists are bound to interpret as an advance the transition from capitalism and its market economy to socialism and planned economy. They quote Lenin, the founder of the Soviet Union: "Capitalism can and will definitely be conquered by virtue of the fact that socialism creates a new and far superior productivity."

On the occasion of the Sixth SED Congress in January 1963 Lenin's disciples in the GDR were unpleasantly surprised when former Soviet party and government chief Nikita Krushchev blamed them for their backwardness in comparison to the Federal Republic: "The comparison is quite simple. What does Fritz get who works in the GDR, and what Gustav who works in West Germany? That is his criterion for judging who is better off. That is why it is your duty so to organize production, so to raise productivity and lift it to a higher level as to ensure that productivity here is greater than in the capitalist countries."

Yet the German Institute for Economic Research ascertained that average productivity in the Federal Republic's industries at the end of the 1960's and even in the mid-1970's was about 50 percent above that in the GDR state industries. To this day the GDR needs three workers to produce as much as two manage to do in the Federal Republic of Germany. This low productivity is the decisive cause of the manpower shortage and lower standard of living in the GDR.

Even the SED leadership admitted some--albeit slight--backwardness. Toward the end of the 1960's Council of State head Walter Ulbricht confessed: "Due to poor initial conditions average productivity in the GDR is still 25 percent below that of West Germany." That was unpleasant enough, because the history of the GDR is also the history of appeals for raising productivity --ranging from miner Adolf Hennecke (norm fulfilled to 387 percent) via textile worker Frieda Hockaus ("we will live tomorrow by what we achieve today") to the promise of the Zeiss employees of August 1979 to make available additional output equivalent to the production of 2 working days. The party bards chanted: "Work like socialists today, and you will live like them tomorrow. Then you will quickly have more meat, more coffee, more wool, more Wartburgs [trademark of GDR automobile]. Forward march, overtake capitalism..."

Comment: The satirical question to Radio Eriwan: "Lenin teaches us that capitalism is approaching the abyss. Now we are told that we are to overtake it. How are we to interpret that? Answer: Unfortunately we have run out of time."

The SED leadership is obviously prevented from blaming reparations or socialism for the productivity gap between the Western and Eastern provinces--non-existent before the war. It must therefore cite other reasons: The GDR is claimed to have gotten too little industry at the partition of Germany. Moreover it is alleged to have been badly damaged by the West by poaching (refugees) and looting (purchases at the free rate of exchange). In May 1965 Walter Ulbricht threatened "that, in preparation of reunification we will charge to the West German account the roughly M120 billion which the FRG owes the GDR and its citizens." At his meeting with Federal Chancellor Willy Brandt in 1970 Willi Stoph, chairman of the GDR Council of Ministers, still presented a 100 billion claim.

Actual: The SED argument is based on a myth. The GDR obtained a quite respectable industrial heritage. In 1961 the Cologne Economics Institute of

the Trade Unions wrote that, in 1944, per capita industrial output in what is now the Federal Republic of Germany amounted to 635 Reichsmark, 761 Reichsmark on the territory of the present GDR. Even the book "Wirtschafts-Territorium Deutsche Demokratische Republik" [Economic Territory German Democratic Republic], published in 1962 by the East Berlin DIE WIRTSCHAFT, though certifying that the GDR got a "relatively small share in German hard coal and iron ore deposits, heavy industries and ports," goes on to admit that "on the other hand German brown coal, copper and potash mining as well as chemicals, machine construction and various light industries were disproportionately represented on our present territory."

On the topic "poaching," the SED leadership supplied remarkably divergent opinions. On 9 June 1953, that is shortly before the popular uprising of 17 June, the SED Central Committee Politburo criticized some Council of Ministers decisions: Serious mistakes were committed in bezirks, kreises and communities regarding the implementation of decrees and orders. As one of the consequences many people left the republic." At the 12th Central Committee Plenum in March 1961, 5 months before the wall was put up, Ulbricht supplemented that statement: "It still happens that valuable citizens leave the German Democratic Republic because they are treated with bureaucratic indifference by government agencies and sometimes by party organs also, because their justified wishes are disregarded."

Actually a frequent reason for flight was not merely dissatisfaction with the so-called construction of socialism but far more the fact that the changes were enforced by Stalinist methods. Though Stalin died in 1953, the Stalin memorial in East Berlin, cherished by Ulbricht, was not demolished until 1961.

The SED frequently cited Kiel Prof Dr Fritz Baade as their chief witness for the justification of GDR reparation claims on the Federal Republic. Baade estimated the value of a fleeing worker at M15,000 (cost of training). Calculated on that basis the GDR "had been deprived by the stream of refugees of a value of M45 billion, and this manpower benefited us in the Federal Republic." In a broadcast sent out over the Deutschlandfunk Baade pointed out in 1965 that he was not the first economist to try and express the value of a human being "possibly somewhat unpleasantly in terms of cash." He cited an article dating back to 1940 and found in the World Economic Archives "which calculates that in the 100 year period from 1820 to 1930 the economy of the United States profited by the manpower represented by immigrants to a total value of \$739 billion. That is triple the amount World War I cost, yet nobody has ever claimed that the United States owe the countries of origin of these immigrants reparations in the amount of triple the costs of World War I."

From the historical aspect it is quite correct to say that inner-German emigration put such a heavy burden on the three Western zones and the Federal Republic of Germany immediately after its establishment, that the minister presidents of the federal Laender made the utmost efforts at their conferences to have the smallest possible quotas of refugees allocated to them. Not until later did the economic effect of the flow of refugees change. It

is also worth mentioning that the GDR not only retained the lion's share of the refugees private property, it also held on to the social security benefits they had earned.

Concerning the Eastern mark amounts illegally exported by GDR citizens and exchanged for Western marks at a rate ranging from 1 : 3 to 1 : 6, this is money which would certainly have been used mainly for consumption within the GDR. In the 1950's GDR citizens had neither the means nor--due to the lack of confidence in their own currency--the inclination to embark on capital formation. Western visitors who spent freely exchanged Eastern mark amounts on consumer goods when visiting the GDR actually used the money for precisely the same purpose it would have served in the hands of the original GDR owners.

Certainly, the exchange operation changed the kind of consumer goods demand, but even a socialist economy could have coped with that. Furthermore, for quite some time the SED leadership considered it proper--for the sake of the class war--to encourage West Berliners to shop in Berlin, spending Eastern money. "The prudent West Berliner shops at the HO [state trade organization]," was the slogan which appeared on one of the first major illuminated advertising signs in East Berlin. In the background lurked the hope thereby to ruin West Berlin business.

The construction of the Berlin Wall, intended to put an end to the "looting" complained of, did not result in the hoped for upswing. In the era of the "open border," the produced national income rose by 41 percent from 1955-1960 ("Statistisches Jahrbuch der DDR 1978" [GDR 1978 Statistical Yearbook]); in similar 5-year periods, 1962/1967, 1967/1972 and 1972/1977, it grew by 26 percent, 29 percent and 28.5 percent respectively.

Gradually it began to dawn on party headquarters in Moscow and Berlin that the planning and management methods required for the socialist economy in an industrial nation in the second half of the 20th century differ sharply from those needed in a mainly rural Russia in the first half of the 1900's. In the USSR also the extent of industrialization achieved compelled rethinking. In 1962, therefore, Ulbricht complained "that dogmatic economics have hampered us--Stalinist dogmatism and our native one." In the following year the then still existing economics council chaired by Alfred Neumann (still a Politburo member), stated: "The weaknesses of our earlier system of planning and managing the economy resulted in faulty circulation."

Once again the East Berlin comrades looked to the great Lenin: In 1921, when the Soviet planned economy was obviously unable to make headway, he introduced the so-called NEP [New Economic Policy]. Private craftsmen, traders and farmers were allowed once again. Factories were permitted greater scope. In the GDR the "new economic planning and management system," familiarly abbreviated to NOESPL, was proposed and accepted.

Similar to the NEP in the Soviet Union this economic reform was designed neither to restore capitalism nor create a socialist type of market economy.

Ulbricht: "The plan continues the decisive tool of our economic policy." The intention was rather to facilitate "the transition from earlier administrative planning to planning by economic criteria" (Ulbricht).

By this means a typical fault of the planned economy was to be removed. In 1964, in the Soviet party newspaper PRAVDA, Ulbricht wrote: "Formerly senior cadres in factories tended to shoot for a lower plan which could easily be overfulfilled and, in the prevailing set-up, ensured high premiums."

To inspire every individual and every factory to economically correct behavior, NOeSPL aimed

- To install a coherent system of economic levers;
- To judge factory performance primarily by the profit earned;
- By charging interest on the fixed assets of the factory to provide an incentive for the better utilization of the machine stock (creation of the "production fund levy");
- To reduce subsidies (industrial price reform) and
- To decentralize decisionmaking powers (management pyramid).

Centralist Ulbricht suddenly asked that the works directors of VEB's and the director generals of VEB's [associations of state enterprises] be allowed "some elbow room and the right to change certain parts of the plan targets to enable them to adjust to changes in supply and demand."

Ulbricht quite openly posed the crucial question and promptly proceeded to answer it--in a manner quite unusual in the GDR: "Should the economic levers have a somewhat different effect than provided in the plan, who is to be deemed in the right?--The criterion is the best possible result, the overall economic effect."

However, the pleasant new freedom did not last very long. As had happened to the Soviet NEP, the NOeSPL soon began to be emasculated and was finally laid to rest without fanfare. In the GDR Ulbricht thus prevented the development which, in the CSSR, led in a straight line to the "Prague Spring." In so doing he destroyed many hopes but avoided the inevitable explosion.

Rarely was the public made aware of the ebb and flow in the reform discussion:

- In 1963 Ulbricht set his face "against any assumption of automatism in the wake of the use of economic levers."
- In 1964 he advocated "a certain self-regulation within the economic system on the basis of the plan."

-- In a 1966 collection of his speeches this principle was emphasized by a subheading.

-- In 1967 NEUES DEUTSCHLAND was of the opinion that "social and especially economic systems are self-regulating."

-- Three days later the newspaper recanted and admitted that the opinion stated in its editorial represented "an error fraught with serious consequences."

-- In 1968 Ulbricht's speeches on the New Economic System were reissued in a larger edition, but both the subheading and the paragraph on self-regulation were missing.

-- In the same year Willi Stoph, chairman of the Council of Ministers, said: "We do not submit to any mechanism or the self-regulation of systems."

The new economic system was replaced by a new bureaucratic system. SED Politburo member Werner Krolikowski, at the time Central Committee secretary in charge of the economy, graphically described this change to the Central Committee in late 1973. He complained that the trade insisted on offering for sale unfashionable narrow-leg pants instead of the modern bell bottom kind: "Upon investigation we are told that the producer was allocated a certain output target using a specific material. Unless plan fulfillment was to be jeopardized, it was impossible to manufacture the more material-intensive bell bottom pants instead of narrow-leg pants."

This self-imposed bondage is by no means a thing of the past. That emerges very clearly from an article in the East Berlin WIRTSCHAFTSWISSENSCHAFT, written in 1978. The author was Prof Dr Harry Nick, research section head at the Institute for Social Sciences with the SED Central Committee. He described the effects of the planning and management methods in effect in the GDR as follows:

-- "They do not favor the use of the best possible material but of that which is available...

-- They stimulate the hoarding of stocks...

-- They postulate an excess of operational administrative costs...

-- They result in lengthening the investment term and the time needed to adopt scientific-technological advances...

-- They cause overtime and, simultaneously, idle times...

-- They reduce the interest in scientific-technological progress generally."

In 1970, the last year of the Ulbricht era, the GDR economy got into trouble. A severe winter showed up the gaps in the energy cover. Frequent power outages led to the political joke which proclaimed the East Berlin television tower the tower of the four seas: "By day one sees the sea of clouds above and the sea of buildings below. By night one sees the sea of lights in the Western part of the city, and in East one sees nothing any more [play on German words "Meer," meaning "sea," and "mehr," meaning "more," pronounced identically]. The Politburo assessed the loss of industrial output caused by the severe winter at about M3 billion. Nevertheless, in 1970 Ulbricht allowed exports and investments to rise so sharply that the share of consumer goods in the national income used at home declined to the lowest rate since the establishment of the GDR (75.6 percent). The Leipzig cabaret "Peppermill" jeered: "Why are there so many potatoes in GDR streets?--Because they cannot be exported." Incidentally, the SED leadership managed to do even that and got the Federal Government, in addition to the road use tax, to pay hard D-marks for the repair of the transit route Berlin/Helmstedt.

Following Ulbricht's replacement the call went out "to consolidate the economy, facilitate a new upswing and once more achieve a higher growth rate" (Honecker). This was achieved despite the first oil crisis of 1973/1974. The 1971/1975 Five-Year Plan proclaimed by Honecker was better fulfilled than any medium-term GDR economic plan in the past.

This success was due to several important causes: In the period 1971/1975 the winters were particularly mild. The new Western policy brought the GDR additional hard foreign exchange. The easing of restrictions on visits to the GDR by Western relatives and friends as well as the introduction of exemption from visa requirements for border traffic with Poland and Czechoslovakia provided a feeling of greater freedom of movement and, along with greater pleasure in life, improved the will to work. Most of all the party leadership eased up on its neglect of consumer demands. "In planning and financing production and supply it will be imperative in future more to emphasize public demand as one of the crucial criteria for collective work, the use of production capacities, raw materials, other materials and rationalization aids." That is what Honecker called for in 1971 at the Eighth SED Congress. The implementation of this policy was facilitated further when it was decided to admit import surpluses instead of earning export surpluses. In late 1972 Honecker was pleased to note: "Discovering the results of one's labor not the day after tomorrow but today and tomorrow, in one's daily life, that of the family, the neighbor, the fellow worker and fellow citizen--quite obviously that is turning out to be increasing motivation for better performance."

Honecker's remedies were welcomed. The "Peppermill" versified: "I am told the problem is now being tackled by Erich Honecker." The public applauded. In contrast to Ulbricht, Honecker offered the consumers relatively "fat years." At the same time the rise in performance remained substantial. Of course some of this success was made possible by the capitalists in the West, who allowed the GDR increasingly larger loans to pay for the rapidly growing excess imports. It is remarkable in this context--though apparently the subject of

dissension in the GDR leadership--that Honecker continued this policy even after the 1974/1975 price explosion for energy and raw material imports, and accepted even greater import surpluses. Werner Larberz, the influential Politburo member (now deceased), addressed an unidentified "opponent" in the summer of 1975, writing in the magazine LINGELT: "he wishes to encourage one-sided and exaggerated consumerism in order to profit from unrealistic expectations."

In the fall of the same year Honecker reaffirmed his economic line to the Central Committee: "The solution is not to be found in the changed distribution of what is available but in increased output." At the same time the party chief, using vivid but very serious phraseology, began to try and rouse the GDR public to new achievements, so as to enable the country to maintain the "foreign trade burdens."

-- Jan. 1975: "A strong rise in economic achievement must provide the resources even in the changed foreign trade conditions, by which we may safeguard and further improve the material and cultural living standards of the people as well as ensure the steady modernization of our material-technological base."

-- October 1975: Honecker announces a 10-point program for the intensification of the economy.

-- September 1976: Purges among officials are intimated. Horst Sindermann, at that time chairman of the Council of Ministers, informs the Central Committee that "just resignation in whatever field" was not admissible.

-- March 1977: Honecker speaks of efforts "to balance the evident foreign trade burden by the dynamic growth of output."

-- May 1978: Honecker calls for "everything to be done to improve the annual growth of the national income above and beyond the rate of increase now prevailing."

-- April 1979: The clarion call by the Council of State chief achieves a temporary climax: "We must have new dimensions in the development of the GDR's economic capacity." The reason for this appeal: "The prices of important raw materials and energy sources, which had risen in past years, continue to rise. We will have to take this into account."

In fact the accounts look bleak. In the anniversary year of 1979 the world markets experienced the second major explosion of energy and raw material prices; in the GDR the losses due to the severe winter and the consequences of poor harvests in the preceding 2 years are displaying lasting effects.

Honecker and his economy are no better off than in 1971. Now as then it is necessary to fill sensitive gaps and consolidate the economy. The parallels are astounding:

-- In June 1971 Loecker said: "We fully share the anxiety of many working people about the disruptions arising from insufficient energy supplies in the rhythm of production and plan fulfillment."--In April 1979 he stated: "On the one hand more is consumed than necessary, on the other switch-offs in material production cause substantial economic disruption."

-- In 1971 NEUES DEUTSCHLAND announced in the official report on the first half of the year that, with respect to industrial consumer goods, "the supply was not always appropriate in regard to either range or seasonal needs." Moreover: "Weather-related losses resulted in difficulties regarding the supply of fruit and fresh vegetables."--The party organ's report on the first half of 1979 said: "Due to delivery arrears the planned supply level failed to be achieved for some manufactured goods with respect to availability in our shops." And: "In the case of vegetables and fruit the level of supplies did not quite match that of the first half of 1978."

Actually the GDR economy is in a worse situation now than in 1971, though at a higher level. The improvements have been "digested" and forgotten. The anxieties continue and are reinforced by new concerns.

Many problems came to the fore at the 9th and 10th Central Committee Plenums in December 1978 and April 1979, as shown in the Politburo reports and Loecker's addresses.

-- Investments: "Balanced construction capacities, materials and manpower are employed for projects outside the plan. On the other hand there were and are arrears in the realization of centrally planned investment projects of great industrial importance."

-- Construction times: "We must aim substantially to cut the construction times earlier assigned for the various projects; the average cut must be no less than one third to one half."

-- Farming: "What we need is greater yield stability."

-- Foreign trade: "Let me say quite plainly, though, that the far reaching changes on the world market call for greater flexibility and efficiency in our foreign trade operations."

-- Profitability: "It will be necessary considerably to reduce persisting losses by better discipline, especially the observance of technological instructions, improved servicing and maintenance as well as prudent repair practices."

-- Research: "The Politburo asks all combines to review research and development assignments and to ensure that they increasingly achieve and help determine advanced international standards."

-- Replacement parts: Among others such investments are to have absolute priority, which "serve the implementation of the decisions on replacement part supplies."

Anger with poor replacement part supplies is as old as the republic and so great that it may at times be aired in the press. The satiric review EULENSPIEGEL, for example, published a drawing in late 1975, which showed a modern factory control center with a big console and many inspection lights, flanked by a red telephone. The text below has the boss saying to the employee who is to watch factory operations from the console: "Whenever there is a breakdown, this will tell you exactly where it happened. Immediately notify the dispatcher center, and just a few minutes later someone will go on an official trip to try and obtain the proper replacement part."

That was the situation of the GDR economy when, in early 1979, it was compelled to cope with the severe winter as well as the consequences of serious errors in decisionmaking. (Report by the Central State Administration for Statistics: "Avoidable disruptions and damage arose as a result of management errors.")

It must be assumed that the party leadership is applying the brake in the matter of consumption, despite its assertions to the contrary. True, consumption is not subject to actual cuts, but its growth seems to have been curtailed. That was the case already in 1978 and the first half of 1979. Honecker took care early on to ask for an "open mind with regard to wishes which simply cannot be met at the present time."

Admittedly, just before the 30th anniversary pensions were increased for 3 million social security recipients. The minimum rates for retirement and disability pensions were raised by M40 to M270 monthly. Honecker also promised that prices would continue stable for rents, services and essential goods. At the same time, though, the head of state forecast that there would be more goods in the higher price categories and informed his audience that "appropriate" prices would be fixed for improved products.

Two more facts strengthen the impression that Honecker will confront GDR consumers with lean years following the 7 relatively fat years (by the criterion of growth rates). At the 10th Central Committee Plenum in April 1979, for example, he elevated to "an absolute priority the reinforcement of the material-technological base of the economy."

Moreover the outlook for consumers is poor because the former policy of accepting growing import surpluses cannot possibly continue as before. After all, in the 6 years from 1973 to 1978 the GDR incurred import surpluses to the amount of about 30 billion Valuta mark. In the 24 years before (1949/1972) it had achieved an export surplus of 120 billion.

So as not to upset the public ahead of time the GDR leadership stopped publication of import and export values. The West Berlin DIW in fact calculated, by way of the partner country statistics, that the annual import surplus may have declined in 1978 and probably also in the first half of 1979. However: The deficits incurred since 1970 have risen further, albeit somewhat more slowly.

In addition consumers must carry another handicap (incidentally, one of the few experiences shared by socialism and capitalism): A mark spent on arms cannot be used for consumption. GDR citizens are therefore bound to be unhappy when learning that their government intends substantially to strengthen defense spending, especially because the per capita cost of defense has long been much more oppressive in the GDR than in the Federal Republic of Germany.

GDR Defense Minister and Army General Karl-Heinz Hoffmann pointed out the priority of defense by comparison with other tasks. He allowed "that the GDR armed forces were at all times provided with the weapons and technical material required in the context of the prevailing requirements, despite the economic burden this entailed." But he still asked for more: "It is a characteristic of modern armed forces in all industrial countries that weapons, delivery and control systems are superseded by more modern systems in steadily shorter intervals." The GDR will soon be confronted with another reequipping of the armed forces and, consequently, a virtually explosive increase in costs.

How is this to continue? On the occasion of the 30th anniversary some prescriptions are emerging, by which the GDR aims in the 1980's to conquer or bypass old and new difficulties.

In the matter of foreign trade, cooperation with the Soviet Union especially will be consolidated. This cooperation is characterized not only by the large share (36 percent) the USSR holds in GDR foreign trade turnover, but also by increasing specialization. Foreign Trade Minister Horst Soelle rightly foresees an "increasingly more intimate interrelation" of the two economies. The announcement of the new program to 1990 is to be the crowning event of Brezhnev's visit. It provides for even closer ties. On the other hand the September visit to Paris of Guenter Mittag, the outstanding economic policymaker in the GDR, has also demonstrated that the GDR leadership continues to be interested in Western trade. To that end it wishes for more loans. Bankers at the latest Leipzig Autumn Fair assured the GDR that they would be glad to extend these on favorable terms: East Berlin was said to be an AI risk.

The "main task" also remains, as it did in all five-year plans of the Honecker era: This involves the further "improvement of the material and cultural living standards of the people on the basis of the speedy development of socialist production, the improvement of efficiency and scientific-technological progress and the growth of productivity." Honecker assumes an appearance of optimism: "The pursuit of the main task speeded up social development and thereby freed considerable energies for raising output." This engine for raising the economic growth rate is to continue turning over. At the same time the party leadership will try to find out how little pressure on the gas pedal is required for that purpose, in other words to what extent it will be possible to shift the weight toward investments in the course of the distribution of the social product.

Speaking to outstanding East Berlin workers Guenter Mittag announced "comprehensive measures" for the economy. They are to help "achieve a new, advanced

and economically even more effective stage of socialist rationalization." That includes the speeded-up development and use of microelectronics, electronic controls and industrial robots. It is intended by this means to save jobs, energy and raw materials in "appreciable economic dimensions."

Quite a lot was published about reforms of the planning and management system as long as a year ago. Honecker described as a significant change the replacement of the associations of state enterprises by combines directly subordinated to the industrial ministries.

"The scope of the combines was expanded," reported the SED general secretary on the occasion of the anniversary. At the same time, though, his premier Willi Stoph issued a call "to make the basis of all management the general national interests anchored in the plan."

In early 1980, with a few exceptions, all factories of the centrally administered industries and the construction industry will be united in 120 combines. They account for 91 percent of all employees and some 90 percent of the research and development potential. Much is expected of them. Guenter Mittag: "It is imperative for every combine to raise its contribution to the economy of the GDR." It remains to be seen in how far that will actually happen.

As far back as 1978 the West Berlin DIW warned against undue expectations with regard to the combines. Guenter Mittag who began his career with the German Railroad, answered the institute and other "capitalist hacks": "Simply from the standard of their training they are unable to understand us." The political jikesters, though, did understand: "Socialism is a system for coping with difficulties which would not exist without it."

Table 1--More Expenditure--Lower Yields

These are the differences in the development of the economies of the two German nations

	(1) DDR	(2) Bundesrepublik
(3) Einwohner je Quadratkilometer (1976)	155 (8)	247 (8)
(4) Beschäftigungsquote (1975)	49,9 Prozent	43,5 Prozent
(5) Anteil der Industrie und des produzierenden Handwerks an der Gesamtzahl der Erwerbstätigen (1975)	(8) 42,0 Prozent	(8) 38,8 Prozent
(6) Arbeiternehmereinkommen im Monatsdurchschnitt (1976)	(9) 927 Ost-Mark	2003 D-Mark
(7) Kaufkraft des Geldes 1977*	(8) 90 Prozent	(8) 100 Prozent
(10) *Kaufkraft der Mark der DDR für den durchschnittlichen Arbeitnehmerhaushalt (auf der Basis des Warenkorb der Bundesrepublik Deutschland)		
(11) Quelle: Karl C. Thierheim, Die wirtschaftliche Entwicklung der beiden Staaten in Deutschland, Leske Verlag		

Key:

1. GDR
2. Federal Republic of Germany
3. Population per square kilometer (1976)

[Key continued on following page]

4. Employment rate (1975)
5. The share of industry and producing crafts in the total of employed persons (1975)
6. Monthly average employee incomes (1976)
7. Purchasing power of the GDR mark 1977*
8. Percent
9. Eastern marks
10. * Purchasing power of GDR marks for the average employee household (based on the goods basket of the Federal Republic of Germany)
11. Source: Karl C. Thalheim: "Die Wirtschaftliche Entwicklung der Beiden Staaten in Deutschland" [The Economic Development of the Two German States], Leske Verlag

Table 2--Growth Losses

Growth in the first half compared to the same period of the previous years (percentage)

	1977	1978	1979
(1) Produziertes Nationaleinkommen	4,5	5	2
(2) Industrielle Warenproduktion	4,8	5,2	3,2
(3) Einzelhandelsumsatz	5,5	3,4	1
(4) Investitionen	8,2	3,3	0,7
(5) Nettogeldeinnahmen der Bevölkerung	5,6	3,5	3
(6) Quelle: Deutsches Institut für Wirtschaftsforschung, Wochenbericht 31/79			

Key:

1. Produced national income
2. Industrial goods production
3. Retail trade turnover
4. Investments
5. Net cash incomes of the population
6. Source: DIW-WUCHENBERICHT No 31/1979

Table 3--Successes

Selected development data--comparison over a period of time

	1936	1946	1978
(1) Bevölkerung (in Millionen)	16,7*	18,4	16,8
(2) davon im arbeitsfähigen Alter (in Millionen)	11,3*	11,7	10,4
(3) Elektroenergie (in Milliarden kWh)	14	12	96
(4) Braunkohle (in Millionen Tonnen)	101	108	253
(5) Rohstahl (in Millionen Tonnen)	1,2	0,2	7,0
(6) Zement (in Millionen Tonnen)	1,7	0,6	12,5
(7) Stickstoffdünger (in 1000 t N)	229	—	892
(8) Phosphordünger (in 1000 t P ₂ O ₅)	32	7	413
(9) Pkw (in 1000 Stück)	61	1	171
(10) Lkw (in 1000 Stück)	19	—	37
(11) Fernsehempfänger (in 1000 Stück)	—	—	489
(12) Kühlschränke (in 1000 Stück)	—	—	609
(13) Fotoapparate (in 1000 Stück)	564	—	872
(14) Schuhe (in Millionen Paar)	38,5	16,9	78,6
(15) Futter (in 1000 t)	85	54	281
(16) Zigaretten (in Milliarden Stück)	17	3,8	23,5
(17) * 1939 - Quelle: Statistische Jahrbücher der DDR			

Key:

1. Population (millions)
2. Population of working age (millions)
3. Electric energy (billion kilowatt hours)
4. Brown coal (million tons)
5. Crude steel (million tons)
6. Cement (million tons)
7. Nitrogen fertilizer (1,000 tons N)
8. Phosphate fertilizer (1,000 tons P_2O_5)
9. Automobiles (thousands)
10. Trucks (thousands)
11. Television receivers (thousands)
12. Refrigerators (thousands)
13. Cameras (thousands)
14. Shoes (million pairs)
15. Butter (1,000 tons)
16. Cigarets (billions)
17. * 1939 - Source: GDR Statistical Yearbooks

Table 4--The Lean and the Fat Years

This is how the economy developed in two eras

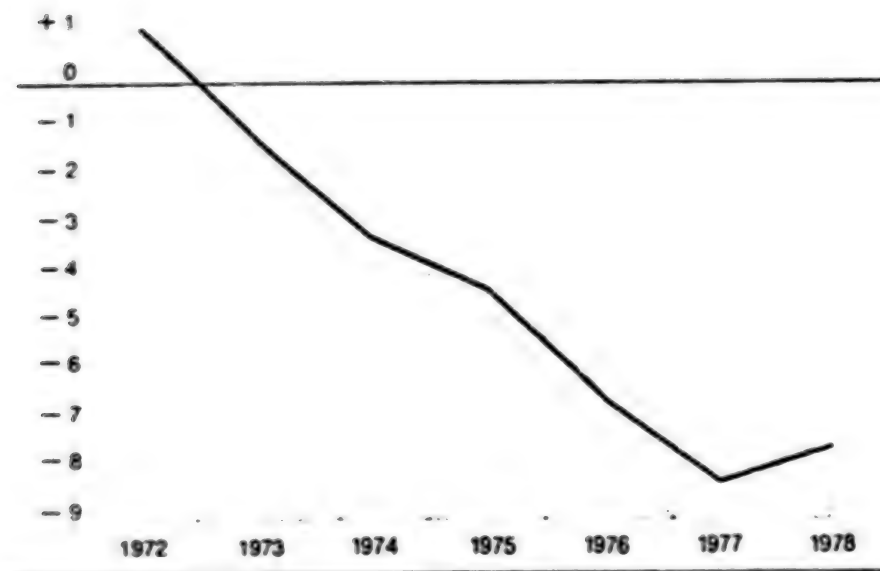
	(1) Unter Ulbricht 1964/70 (1963=100)	(2) Unter Honecker 1971/77 (1970=100)
(3) Produziertes Nationaleinkommen		
(3a) Zuwachs in Prozent	+ 42	+ 42
(3b) Zuwachs in Milliarden Mark	+ 32	+ 46
(4) Investitionen		
(4a) Zuwachs in Prozent	+ 99	+ 46
(4b) Zuwachs in Milliarden Mark	+ 17	+ 15
(5) Einzelhandelsumsatz		
(5a) Zuwachs in Prozent	+ 35	+ 40
(5b) Zuwachs in Milliarden Mark	+ 17	+ 25

Key:

1. In the Ulbricht era
2. In the Honecker era
3. Produced national income
- 3a. Percentage growth
- 3b. Growth in billion marks
4. Investments
- 4a. Percentage growth
- 4b. Growth in billion marks
5. Retail trade turnover
- 5a. Percentage growth
- 5b. Growth in billion marks

Graph--The Unending Descent

GDR foreign trade balance (billion Valuta marks)



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GDR LIVING STANDARD CLAIMED HIGHER THAN THAT OF FRG

East Berlin NEUES DEUTSCHLAND in German 22-23 Sep 79 p 2

[Editorial by A.K.: "Between Dream and Reality"]

[Text] The closer the GDR comes to the celebration of its 30th anniversary, the greater becomes the embarrassment of the leading FRG mass media which as much as 30 years ago prophesied as a matter of principle a short life span for the GDR. It is well-known now that these prophecies have not come true. The reality of the GDR did not adjust to the dreams in the brains--obviously poorly supplied with blood--of the editors of West German radio and television stations and newspapers. On the contrary, year by year our republic has been developing more successfully into a stable state with a productive, dynamic national economy.

As already stated, the social organism of the GDR, proclaimed dead decades ago, is more alive than ever, and if the latest growth figures of important industries are taken into consideration, it can be stated that the GDR economy has proven itself strong enough to overcome to a large degree the setbacks caused by extreme weather conditions at the beginning of the year. Clear proof of this, which cannot be discounted by even the strongest skeptics, is the growth rates of sectors of important industrial ministries, which amounted to between 6 and 9 percent in the months of June, July and August.

It is especially interesting to compare the speed of industrial growth of the GDR with that of the FRG. It is well-known that the FRG is not able to rid itself of the deep economic crises brought about by the ups and downs of business life. The capacity of the economy cannot be used to its full extent. An incontestable testimony to these phenomena is the army of millions of unemployed and that large number of young people who cannot learn a trade. The essential productivity figures in the GDR and FRG from 1970 to 1978 indicate clearly that a greater growth rate was attained in the GDR.

Let us consider the most concentrated expression of economic performance the national income produced annually. Whereas from 1960 to 1970 the national income grew at about an equal rate in the GDR and FRG, the rate of development reached 49 percent between 1970 and 1978 in the GDR, thereby considerably surpassing the rate of increase in the FRG, which was only 24 percent. The initial advantage of the FRG in regard to the level of national income, which had essentially been caused by a better starting position, thus decreased considerably. Whereas the national income produced per inhabitant was 22 percent higher in the FRG than in the GDR in 1970, the difference in 1978 was only 3 percent.

This achievement is caused by several factors. Above all, the GDR succeeded in better utilizing its social manpower potential. The rate of employment among the part of the population that is able to work rose in the GDR from 70 percent in 1960 to 79.5 percent in 1978. In the FRG this rate of employment fell from 68.8 percent to 62.7 percent in the same time period. Correspondingly, the number of employed persons in the GDR rose from 7,968,000 in 1960 to 8,167,000 in 1970 and 8,578,000 in the past year. In the FRG, the number of employed persons rose between 1960 and 1970 from 25,954,000 to 26,169,000, but afterwards it decreased to 24,517,000 in 1978.

These contradictory trends arise from important social factors. The realization of the right to work in our republic, the equal position of women in society--which finds its expression especially in their participation in the job market--guarantee in our country a high rate of utilization of the manpower potential. The declining numbers [of employed persons] in the FRG are the result of a high unemployment rate and also of the fact that in the aftermath of the crisis many foreign workers who had worked in the FRG until this time were simply sent home. In 1977 their number had decreased by 723,000 compared to 1973 and amounted to only 1.9 million.

To round off this picture one must add that in our country the ratio of workers employed in production work as compared to the total number of workers has decreased considerably more slowly than in the FRG. This development, which is not unusual in developed industrial countries, is overlaid and strengthened by parasitical phenomena in the profit economy of the FRG, where in 1978 a total of 3.4 million fewer people were working in the field of industrial production than in 1960.

The field of work productivity also shows several changes in comparisons between the GDR and FRG for the years mentioned above. Work productivity in industry in our country increased by 49 percent from 1970 to 1978, whereas it increased by 39 percent in the FRG. Thus we were again able to catch up, even though under the influence of the crisis the pressure to rationalize increased considerably in the capitalist German state and many jobs were eliminated. The situation in the area of accumulation is related to this. Computed per inhabitant, accumulation increased by 41 percent in our country in the time mentioned above, but in the FRG it increased by only 2 percent. Since 1974 the absolute volume of

accumulation per inhabitant has likewise been higher in our country. This change resulted in the fact that the capital goods inventory in the producing sector was expanded more intensively in the GDR than in the FRG.

The substantial changes which have taken place to the benefit of the GDR's economic capacity have naturally had important effects on the standard of living. Here too, the GDR has shown a faster growth rate. Individual and collective consumption alone rose by 150 percent per inhabitant in our country between 1970 and 1978, whereas the increase amounted to 29 percent in the FRG. Real earnings rose by 136 percent in the same period in the GDR, and in the FRG by 120 percent. These differences find even stronger expression in the retail business. It grew by 150 percent per inhabitant between 1970 and 1978, much faster than in the FRG where a 120 percent growth was attained. It is obvious that these computations must be based on unchanging prices in order to preclude the distortions which inflation would bring to this picture in a capitalist country. If we include housing construction, it becomes even more evident that greater progress for the population was made in our country. Housing construction in the GDR was 1.5 times as extensive in 1978 as in 1970, whereas it has decreased rapidly in the FRG since 1973. In 1978, 68 apartments per 10,000 inhabitants were built in our country; the FRG figure was 61.

It can be said in summary that the difference in the levels of individual and collective consumption has diminished considerably. If one considers in addition the many different achievements of social policies in a socialist state, and also the importance of our high educational level and our free health care for each individual, one must consider the living standard of the inhabitants of the GDR higher than that of the FRG.

Real development therefore took a completely different course than that which Western prophecies would have us believe. It took this course even though the FRG economy still has several objective advantages. One must only remember the fact that the FRG has substantial supplies of hard coal, which produces three times as much heat as the soft coal in the GDR. On the global scale, the industrial potential of the FRG is the fourth or perhaps even third largest. The FRG was able to secure positions on international markets which to a large extent were closed to the GDR because of the decades of diplomatic blockade. Neither do we disregard the fact that the GDR, as well as the FRG, is one of the countries whose economic strength in the world is considerably above average. The national income produced per inhabitant in both countries, for instance, is more than three times the average.

Several things could be added in one regard or the other. But one thing is incontestable: The economy of the socialist German Democratic Republic has been growing in a more stable and dynamic way than the monopolist economy of the FRG, and our economic progress has resulted in important advantages for the workers.

STATE SECRETARY, UNION OFFICIAL DISCUSS WAGE REGULATIONS

Budapest NEPSZAVA in Hungarian 7 Oct 79 p 3

[Interview with the Under Secretary of the Ministry of Labor, Dr Albert Racz, and the SZOT Secretary, Otto Juhasz, by Emil J. Kimmel]

[Text] The basic condition for preserving the results achieved in improving our economy is better and more efficient work. This is also the purpose of the coming annual modification in economic regulations. Major attention is naturally devoted to wage regulations, along with the change in the price structure for products. Perhaps no single element in our controlled economic system has received as much attention in the recent past as wage regulation. How can the wage system be put at the disposal of economic policy goals more effectively than in the past? We discussed this subject with Dr Racz, the under secretary of the Ministry of Labor, and with Otto Juhasz, the secretary of SZOT [National Council of Trade Unions].

[Question] What strains are produced in the national economy by the current application of wage regulations?

[Racz] The experience of past years assures us that the wage system has controlled the flow of buying power and kept it within the planned range. At the same time, unfortunately, economic efficiency contributed to improvement to a lesser extent than anticipated. Wage payments were not always balanced by enterprise output. The expansion of mass wage regulation has certainly been beneficial, although it did not always bring about satisfactory changes in the staff economy of the enterprises.

[Juhasz] The simultaneous use of other wage regulators was proper, and will also be necessary in the future because, along with consideration of

the characteristics of the individual branches, it contributes to a flexible wage economy. Further expansion of wage regulation is important under the current economic conditions.

[Question] In what way do the new regulations, in force since January, differ from the older ones?

[Racz] The fundamentals remain unchanged, but the circumstances under which they will operate have been modified, and we anticipate that there will be a closer relationship between the efficiency of enterprise economy and the ability to raise wages. The 1.5 percent wage increase (not connected with enterprise output) will disappear, and every forint will have to be earned under every form of wage regulation associated with output, the future dominant form of wage regulation. The modifications are expected to eliminate the previous problems. For example, progress in wage increases is one such element which will help the long-term economy.

[Question] Will the real differences in output be satisfactorily reflected in the ability of enterprises to raise wages?

[Racz] In the past it was very easy for enterprises to get a tax-exempt ability to raise wages 6 percent. On the other hand they did not undertake to pay out any more than that in wages, since that would go hand in hand with a higher payment obligation. They would rather stop around 6 percent. This decisive point in the future will be 8-10 percent, instead of 6 percent, which is double the average planned raise. Within this range developing ability stemming from the improvement in efficiency and the annual maximum amount of 3 percent in savings resulting from personnel reduction can be used without any restrictions. Only the best enterprises can reach the top. On the other hand there are never any objections anywhere to honoring really good workers in a suitable way by distinctions made within an enterprise.

[Juhász] It is not expected that the increased obligations can be met everywhere in a single way. Those enterprises which can afford the minimum wage increase from year to year have the ability to raise wages by 2 percent (with the centrally prescribed payment benefit).

[Question] Thus wage supports and the role of central wage regulation will change in the future?

[Racz] These two points must be answered separately. Wage supports must be used better than in the past as an incentive to achieve the increased central tasks. Their "lifesaver" role will disappear. However, more central wage policy measures will also be needed in justified cases.

[Question] While not very significant yet today, will it become more general for workers in efficiently operating enterprises to be paid best with respect to the national economy?

[Kacz] Absolutely. The wage regulation system levies identical requirements on every enterprise, but wages can be better where opportunities are best applied in the national economic interest. We understand perfectly well that it is very difficult for an enterprise operating on a high level to achieve further spectacular improvement. The so-called level concern comes into the tax-exempt system of the participating base in their interest. This means more favorable tax legislation for the enterprises mentioned.

[Juhasz] I am convinced that working conditions and the degree of supply for society play a role almost equal that of wages in the labor decisions of workers and in the attraction of some enterprises. Only well-functioning enterprises are able to constantly assure relatively high wages and to provide high quality for society. Let me add that, along with putting general principles into force, we naturally pay special attention to the evolution of earnings of workers in large-scale industry and to the evolving working conditions.

[Question] how can the system of internal enterprise interest guarantee the quality and quantity of finished work better than at present?

[Kacz] The wage regulators alone are unable to do so. All of the regulations together make it possible. Let me emphasize possible because the development of internal interests is the private affair of every enterprise. Wage development possibilities will probably differ as a function of the modifications. All of this renders a measurement and evaluation of output indispensable on the basis of the modern, stimulating, internal enterprise system of interests. It is not only necessary to differentiate among workers, but also among the various enterprise departments, since they do not make identical contributions to the results.

[Question] In the future noticeable differences in wages will be possible as a function of real output. Under such circumstances how can the goal of the trade unions, to protect their interests, be realized?

[Juhasz] The use of wage forms expressing output and differing according to job performance will match the interests and sense of justice of the workers, and also stimulate fulfillment of our social goals, but only when the norms are really norms and realistic. The trade unions do not believe that the overwhelming majority of workers are against norms, but that they rightfully demand that, in the technical and organizational sense, the prerequisites for job performance under norms be continuously and reliably assured.

[Question] With its anticipated expansion in scope, won't the performance wage system reduce the jurisdiction of trade union stewards in wage practice?

[Juhász] There is no chance of that. It is much more probable that the responsibility of the stewards will grow as they make decisions, for example, in developing the principles of the internal enterprise system of interests and the principle of wage increases. This will be accompanied by protection of personal interests. Of course it is indispensable for the trade union officials to carefully observe work organization and the feasibility of production obligations.

[Question] The dispute about which element of pay has the greater role in incentive is an old one: is it the basic wage, the sliding scale wage or earnings?

[Racz] This again concerns only the enterprises. Central regulation only establishes the possibility of making the right decisions. In the years the importance of participation came to the foreground since the enterprises applied almost everything to raising the wage level. It won't hurt to repeat the most important basic principle here: production must be found behind every forint of wages.

[Juhász] I would like to turn that around and say that earnings should be stimulated by every factor. In my opinion the ratio of sliding scale wages independent of performance should be reduced in earnings in the future. The distribution of reserves at the end of the year, resulting from a prudent wage policy, is popular but a totally undesirable managerial procedure. No matter what wages are involved, the essential point is that payment be brought as close in time as possible to the completion of the work.

[Question] What are the more significant effects to be expected in enterprise economy as a result of the modified wage regulations taking effect on 1 January 1980?

[Racz] This will primarily be the fact that wage differentiation and reasonable staff economy will become prevalent in enterprises. They will not only concentrate on procuring funds to cover wages, but also on seeing that enterprise results really increase along with pay. All of this will not take place in a single year, but rather requires consistent work. The wage regulation system is not the only incentive for improving economic efficiency. We must part with the idea of using the wage system to solve incentive, effectiveness and managerial leadership.

[Juhász] More effective economic conditions can only be established with the participation and active cooperation of the workers. The enterprises which recognize this can be expected to strive to develop and use initiatives latent in socialist work emulation. The trade unions will support more effective management because this is the only alternative to safeguard the standard of living. It is essential for our goals to include the stimulating effect of plant democracy, which is also a condition for effective realization of the 1980 tasks.

SOCIOECONOMIC DEVELOPMENT TRACED OVER 35-YEAR PERIOD

Bucharest REVISTA ECONOMICA in Romanian 20, 27 Jul and 3 Aug 1979

[Article by Dr Mircea Bulgaru]

[No 29, 20 July 1979, pp 6-8, 12]

[Text] In the years following 23 August 1944, an event of overwhelming importance for Romania's destiny, profound changes were produced in Romania, changes of great amplitude in the economic, social and class structure as well as in the people's material and spiritual life. In the general strategy of socialist construction, the Romanian Communist Party placed in the forefront the rapid development of production forces, creation and modernization of the material-technical base specific to the new system, the assimilation of the most advanced achievements of science and technology, which would assure a high economic growth rate and a substantial rise in the people's standard of living. This basic political option, with innovative elements demonstrated in particular after 1965, on one hand was founded on a clear-sighted analysis of Romanian realities--in the old system a country with a poorly developed economy, a backward economic structure, four-fifths of the population employed in agriculture, one-third of the population illiterate and a low standard of living--and, on the other hand, on the requirements for progress resulting from the contemporary scientific-technical revolution.

By the working class' takeover of political power under the party leadership, by nationalization of the main means of production and the cooperativization of agriculture, objective conditions were created for application of a strategy for development of the Romanian economy of broad perspective, a strategy whose main link has become the country's industrialization as the only means of eliminating economic backwardness and the differences compared with the economically developed states and of utilizing the natural and human riches and rapidly increasing material production and strengthening the country's independence. As Comrade Nicolae Ceausescu stressed, "The party always placed industrialization in the center of the general policy of building the socialist society in Romania as the only means for elimination of economic backwardness, high utilization of natural riches, rapid increase in national wealth, rise in the masses' standard of living and strengthening of national independence."*

* Nicolae Ceausescu, "Speech at the Congress of Workers in Industry, Construction and Transportation," July 1977, Political Publishers, 1977, p 17.

The industrialization concept, worked out predominantly in the years following the 9th party congress in a single, complex and long-range concept, through the priority development of branches which produce the complex means of production and modern subbranches which would assure progress of all the other branches of the economy, primarily agriculture, the economic rise of all the country's zones and the superior utilization of all Romania's potential are deeply linked with the interconditioning with the totality of deep and rapid changes demanded by the contemporary scientific-technical revolution. This has required the mobilization of a complex of economic, human, technical and organizational factors knit together in close interdependence.

A Policy of High Accumulation--The Base for Outstanding Progress

Under these conditions, it was decisive that new cadres were formed for all areas of activity and a broad investment program was implemented to assure a high economic growth rate and a high rate for the accumulation capital. The basic option of allocating a large portion of national income for accumulation within justified economic and social limits results from an analysis of the objective demands of industrialization, rapid modernization of agriculture and the other branches of the national economy, the creation of new jobs and more efficient utilization of society's supply of time, raising zones which lagged behind in the past, speeding up the general economic and social progress of the country. Distribution of national income for development and consumption for a three-decade interval is characterized by the figures given in Table 1.

Table 1: Final Utilization of National Income (comparable prices) (in %)

National income		For	
		Consumption capital	Accumulation capital
		Structure	Structure
1951-1955	100	62.4	17.6
1956-1960	100	84.0	16.0
1961-1965	100	75.7	24.3
1966-1970	100	71.2	28.8
1971-1975	100	65.9	34.1
1976-1980	100	66-67	33-34

Source: Calculated according to "1978 Statistical Yearbook," p 93 and other official documents.

This evolution, examined for broader intervals, could be classified into three types which characterize the way national income is distributed for development and consumption in the years of socialist construction. In the 1951-1960 decade, this ratio was relatively low (16-17-17.6 percent), that of the second stage--1961-1965--corresponds to a relatively average amount (24.3 percent), while the last period of 15 years is at a high level of accumulation (28.8-34.1 percent). If we take as the base in the calculation the stage when we were achieving a relatively average accumulation (1961-1965), we see that in the first years of socialist construction (1951-1955) the

effort at accumulation was 27.3 percent lower, while in this five-year plan the indicators of accumulation compared with the same period rose more than 1.35 times. Of course, the ratio between accumulation and rise in national income in all cases could make it possible for the ratio between accumulation and rise in national income in all cases not to be absolutely linear and quantifiable in a short period of time; despite this, some correlations may be identified in quantitative terms and subjected to analysis. For example, in the 1956-1965 ten-year period, when the percentage of accumulation in the national income oscillated by five-year periods between 16 and 24.3 percent (an average 22.4 percent for the entire interval), the national income progressed at an average annual rate of 8 percent, while in a 15-year period (1966-1980), when between 28.8 and 34 percent is being allocated for accumulation (an average of approximately 32 percent), the national income growth rate rises to 9.5-10 percent.

The greatest portion of the national development capital was headed for development of the material-technical base and modernization of fixed capital from the economy. Through the investment policy basic structural changes have been and are being oriented by big sectors of the economy and, in them, forming thus the country's industrial profile as a whole and at the zone level. Total investment volume rose 26 times compared with 1950, representing 169.3 billion lei in 1977, that is, 7,815 lei per capita and around 16,500 lei per working person. In accordance with the economic policy for modernizing the economy, the greatest share belongs to industry (47.7) as the main bearer of technical progress, after which come agriculture (14.1 percent), construction and so forth. The size of this considerable material effort for the development of material production is expressed by the fact that in this five-year plan about 2,900 industrial projects are to be put into operation, with around 1 trillion lei being involved for the economy as a whole, which means a volume nearly as large as the one utilized in the past three five-year plans.

In mind for the next five-year plan (1981-1985), as shown in the draft directives of the 12th party congress, are continuation of the economy's development at a rapid rate and allocation of a large portion of the national income for development, with the portion that will be allocated from the national income for this purpose to be around 30 percent, which corresponds to the demands of the future stage of Romania's development. Without question the economy's involvement in such an effort at development has many implications and raises complex problems of economic and social efficiency, of assuring a reasonable ratio between investments and fixed capital placed into operation, maintaining unfinished investments at acceptable amounts, the territorial placement of investments, putting new projects into operation on schedule and shortening the timetables for putting them into operation, achieving the technical parameters forecast, the intensive use of existing production capacities--these are problems in the center of concern for the political decisionmaking organs in Romania and the center of concern for all units in the economy.

Sustained Vitality for All Development

The policy of forming and utilizing the national development capital as the basic option of broad perspective, within the general strategy of development and its tactical lines, is reflected totally in the sustained growth rates of the economy (Table 2). What characterizes the Romanian economy as a whole are the high rates of development, the vital correlation, achieved more and more strictly, between the indicators which characterize the basic production factors and the results of economic activity, the growth in production in close relationship with the population's evolution and, in the end, the rise in the population's final incomes and their purchasing power.

Table 2: Progress of Main Indicators of Development of the National Economy 1950=100

Indicators	1955	1960	1965	1970	1975	1977	Average growth 1951-1977
							%
Population	106.2	112.8	116.7	124.2	130.3	132.8	1.1
Working population	112	114	116	118	121	123	.8
Fixed capital	125	161	223	337	534	645	7.1
National income	192	268	413	699	X 10	X 12	9.7
Sales of goods by socialist trade	200	290	479	726	X 11	X 12	9.8
Volume of foreign trade	194	299	478	836	X 19	X 26	12.7
National income per capita	131	238	354	432	784	923	8.6
Real income per capita	137	161	214	263	366	411	5.4

Source: "Statistical Yearbook of the Socialist Republic of Romania," 1977, p. 83.

An analysis of the progress of Romania's economy over a 35-Year period gives rise to several general overall findings.

First we note a considerable and uninterrupted rise in the production forces and material-technical base and fuller and fuller occupation of demo-economic forces, the growth in the technical supply of labor and qualification of the cadres. In the 1950-1977 period fixed capital for the economy overall rose 6.5 times at high rates differentiated by big departments of the economy: industry--15 times, construction--39 times, agriculture--around 4 times and transportation and telecommunications--more than 5 times. The working population, as the basic production factor, rose in the same period overall 1.23 times. Various trends were seen by branches--that is, a substantial increase in the population working in nonagricultural branches, primarily industrial, and the reduction of active population in agriculture by nearly half as a result of the modernization and rise in efficiency of work in this branch. The average rate of rise in fixed capital which was faster than of the working population (7.1 percent, fixed capital and .8 percent, working population) favored a growth in technical supply of labor (fixed capital returned per worker) of 5.2 times, which expresses an average growth rate for the entire period which is rather high (8.8 percent). On this base it was possible--and this is a second feature of development which we seek to bring out--for the gradual emphasis on the action of intensive factors of development and retention of high indicators of rise in production and a considerable increase in

national income and social labor productivity. Under these conditions, compared with 1950, more than 80 percent of the increase in national income was obtained due to the growth of social labor productivity; this increased more than 9 times in that particular period.

Third, there was considerable development of the stable domestic market due to the growth in production of goods, change in the proportion between agricultural and industrial population and more and more integration of production in the socialist economy. So the domestic market of consumer goods, expressed totally by the volume of sales of goods by socialist trade, rose 12 times at an average annual rate of 9.8 percent. At the same time, the volume of foreign trade rose 26 times at an average annual rate of 12.7 percent for the entire period. The increase in our commercial relations with other countries also may be expressed overall by the coefficient of flexibility of foreign trade, which is 2.1 times, which means that a 1-percent increase in national income corresponds to a doubled increase in volume of foreign trade.

Fourth, the statistical indicators reflect the basic relationship between economic development, population growth and rise in standard of living as the supreme goal of the entire policy of our party and state. Romania's population during this period rose more than 1.3 times, under conditions in which the national income progressed much faster--12 times--while the economic growth indicators (calculated as a ratio between the two indicators) rose 9.2 times at an average annual rate of 8.6 percent for the entire period--one of the highest rates in the world, expressing the uninterrupted rise in development of the Romanian economy. The rise in the population's net incomes, under conditions of assuring that the price indicators are maintained within the limits agreed on by the plan, considerably increased the population's purchasing power, with the indicators of real incomes per capita according an average 5.4-percent rise for this entire period.

The rapid rates of development, whose decisive factor is first our own effort, have led to a reduction in the economic differences and gradual nearing of our development levels to those of the economically advanced countries. This process continues to be demonstrated in the long-range social-economic development of Romania as well. Using statistical data with the necessary prudence, we see that the differences between our country and the economically advanced states, expressed by per capita national income, were reduced from 8-10 as it was in 1960 to the current 4-5.

Development of the national economy does not mean only a quantitative growth, although this, too, is very important, but also a qualitative growth with broad changes in economic structure, in the distribution of production capital and labor force by sectors of the economy, in forming the national income by branches and subbranches, territorial distribution of the material-technical base and so forth. This objectively necessary process, demonstrated in particular, as we were showing, in the years following the 9th party congress, reflects a new stage in the economy's complex development oriented toward improving the qualitative aspects of production activity, stressing the intensive nature of economic growth, forming that behavior and those reflexes which permit rapid adaptation of the economy to the demands of progress and the modern

scientific-technical revolution. This option in development has produced changes on many levels, aimed at the technical, technological, technical-economic structures and, in the end, the economic and social structures. Mainly it is a question of the structure of the national income by branches and subbranches, territorial distribution of industry and the other branches of the economy, the proportions and correlations between branches and subbranches, primarily between industry-agriculture, the specialization and profiling, the size of enterprises and so forth. Modernization of the socialist economic structure fits into the broad process of improving the entire social, economic and political organism, seeking to create forms of organization and leadership of the economy which correspond to the country's stage of development.

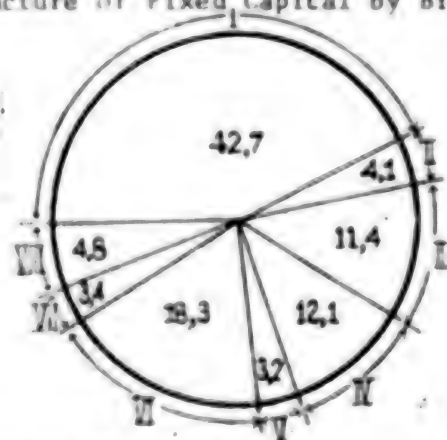
An Increasingly More Powerful Material-Technical Base, Which Must Be Used On a High Level

Priority changes have been made in the material technical base of society, the growth of fixed production capital, social-cultural services, housing as well as in the energy and raw material base.

a) The Structure of Fixed Capital

In this framework, with regard to the rise and structure of fixed capital by branches of the national economy, as a result of the action of an investment policy oriented appropriately, we note very important changes by branches and subbranches both within them as well as in the territorial distribution of production forces. From the overall evolution of the material-technical base of the Romanian economy in the postwar years, several of the more important findings should be mentioned first. (See graph)

Structure of Fixed Capital by Branches of the Economy in 1977 (in %)



- Key:
- I. Industry
 - II. Construction
 - III. Agriculture, silviculture
 - IV. Transportation and telecommunications
 - V. Circulation of goods
 - VI. Communal management
 - VII. Education, culture, health
 - VIII. Other branches

First, a more rational growth in fixed capital by large spheres of activity, the overwhelming portion of them (around 65 percent) being intended for the branches of material production, which in the last analysis decide the entire social-economic development. Second, we note the predominant rise in volume of fixed capital in industry (from 19.8 percent in 1950 to 43 percent in 1977), a branch with a decisive role in the modernization of the entire economy. Third, the relative fall in the share of fixed capital in agriculture (from 19 percent in 1950 to 11.3 percent in 1977) but, under the conditions of

absolute growth, around 4 times of fixed capital in this branch. Fourth, the rise in degree of modernization of fixed capital under the conditions of a high quota of renovation of them with the most improved equipment (around three-fourths of total fixed capital in 1977 was renovated in the last 12 years). Fifth, a process of reorganizing fixed capital by branches is taking place in favor of those elements of the technical base which have a direct role in increasing the production of material goods, such as machinery, equipment and installations and so forth.

On an overall level one may point out that the total volume of fixed capital in the economy in 1977 was 1,454,300,000 lei with an average value of 67,000 lei per capita or nearly 142,000 per person working in the economy, which without a doubt proves the relatively high level of technical supply of our economy. In the next five-year plan, as brought out in the draft directives, fixed capital in the economy is to reach 2 billion lei, which means a powerful material base able to sustain the country's continued development at a fast rate. As we know, supply of the economy with such a material base brings to the forefront the problem of utilizing production capacities with the best possible productivity, raising the economic efficiency of fixed capital, the placement of enterprises and making them a sensible size, growth in net production belonging to a unit of production capacity, together with reductions in production costs in all sectors of economic life, the total elimination of waste and losses for the economy. As stressed in recent party documents published, the reduction in material costs and in energy and material consumption is becoming a central problem for the entire economy.

b) Structure of the Energy and Raw Material Base

Romania's economic growth in the years of socialist construction, profound changes in the economic and social structures, multiplication and diversification of consumer needs have exercised a powerful attraction of natural resources into economic circulation, primarily those of energy, raw materials, water, forest resources and so forth. As is well-known, our natural resources, except for the agricultural ones, are limited in potential, which requires that appeal be made to the importing of raw materials (crude oil, ferrous and some nonferrous ores and so forth) in order to maintain our rapid growth rate.

Primary fuels, particularly crude oil and methane gas, have been drawn intensively into production throughout three and one-half decades. Compared with the prewar period, the production of electric power was 75 times greater (59.9 billion kWh in 1977), last year reaching more than 2,700 kWh per capita. Of total electric power consumption of 55.6 billion kWh, recorded in 1977, industry absorbs 68.4 percent, transportation and telecommunications--2.4 percent, construction--2.1 percent, agriculture and silviculture--4.4 percent. A certain trend formed in the structure of electric power production by sources of formation, with regard to reducing the share of thermoelectric power from 92 percent in 1950 to 84.4 percent in 1977 and growth of hydroelectric power during the same period from 8 to 15.6 percent. Important changes were produced in the structure of primary energy used to produce thermoelectric power, as we see from the figures in Table 3.

Table 3: Structure of Thermoelectric Power Production According to Way Fuel is Consumed (in percent compared with the total)

	1955	1960	1965	1970	1975	1977
Thermoelectric power total, percentage of which is produced with:	100	100	100	100	100	100
Coal	19.5	22.4	19.6	30.3	33.2	30.6
Diesel fuel and crude oil	35.7	13.1	5.5	3.3	5.0	11.9
Natural gases	41.7	63.6	74.2	63.5	59.2	54.6

Source: "Statistical Yearbook of the Socialist Republic of Romania," 1978, p 181.

In the current period efforts are being directed toward the rational management and superior utilization of resources of hydrocarbons, crude oil and gases, seeking to reduce and gradually replace them with inferior coal as fuel for producing thermoelectric power as well as a strict system of saving and limiting and, in the near future, eliminating the situation as importers of fuel and energy.

Economic development requires large quantities of raw materials from the natural deposits under conditions where Romania is not a country rich in these resources. The option for forming an economy with a modern structure, however, has imposed on us--of course, within certain limits--the development of the ferrous and nonferrous metallurgy industry, the creation of our own metal base and the increase in pig iron and steel production. So, in 1977, the country's steel production rose more than 20 times compared with 1950. Assurance of a sensible proportion between development and natural resources as decisive factors of economic growth is in the national programs in several of the more important directions: a) The need to reshape the consumption of resources, drawing inferior fuels into circulation (coal, bituminous shale and some substitutes), other energy sources, saving on hydrocarbons and superior utilization of them; b) The discovery of new fuel and raw material reserves; c) Better management of raw materials and fuels, reduction of specific consumption, the reusage, recycling and recirculation of any parts of raw materials and materials and any quantity of energy; d) Changes in the actual technological process of some branches which would lead to minimum consumption of fuel and raw materials.

In accordance with the needs of the national economy, water consumption has been required intensely and the volume of drinking water distributed to the population in the 1950-1977 period alone under the impulse of the industrial civilization rose more than 14 times. Our water resources, evaluated at 240 billion cubic meters (11,400 cubic meters of sweet water per capita), characterizes an average potential compared with other countries and with the demands of domestic consumption, which requires the accumulation of large quantities of water through intensification of the rate at which the hydro-energy potential is put into use (currently we are using 25 percent of the technical potential set up) as well as actions to evacuate used waters and through selection of technologies which would reduce the degree of water pollution, dam and drainage projects and to maintain ecological balance and so forth.

Implementation of the industrialization process and modification of the type of consumption according to new social requirements have amplified the need for wood, exercising continual pressure on the forest resources. In this period, timber production more than doubled compared with the prewar period and export also developed in the same proportion. Our country's forest reserves of 6.3 million hectares (26 percent of the country's area) assure .29 hectares of forest per capita, which under the conditions of improvement in the structure and growth in output per hectare can assure the needs of consumption and other reserves of the economy. Our special programs for development of the forest reserves in this direction aim at a reshaping of domestic consumption (strict economizing on wood, the introduction of substitutes, the sustained growth of production through utilization of the same volume of wood) and at rationalization of timber exports, extension of the area occupied by forests on all terrain which cannot justifiably be used for other purposes, productive and quality improvement in the structure of forest resources, through a growth in the area occupied with fast-growing species (poplars, willows and so forth) and rise in the percentage of valuable species with long reproduction cycles like the resinous trees from the current 26 to 40 percent in the next three and one-half decades and increase in the superior utilization of wood.

In the years of socialist construction important achievements have been obtained in the use of natural agricultural resources and in improving the structure of categories of land favoring the most intensive ones, setting up areas for irrigation of 2 million hectares, which in 1978 represented about 40 percent of Romania's land which could be set up. In the 1950-1978 period food production developed at an average rate of 4.5 percent, which means that our indicators of food independence (expressed totally as a ratio between production and population) are particularly favorable, recording in this period a growth of 2.1 times, being one of the highest compared with many other countries. As the rate of arable land of .45 per 100 hectares per capita could fall to .40 hectares per capita by 2000, according to population growth, and the demand for agricultural food production continues to rise, the need arises for the fullest possible utilization of agricultural land, this great national wealth. Rational use of the land, keeping and raising soil fertility have become a state problem, with the land having moved under legal protection. State policy in this area in particular aims at a) attracting, maintaining and preserving agricultural land under the conditions of industrial expansion and growth of urbanization; b) zonal placement of crops according to economic and pedological conditions and optimization of the structure of the way the cultivated areas are used; c) application of a complex of measures to raise the soil's production capacity through mechanization, chemification, irrigation and extending of highly productive soy and the gradual transition to a complex system of intensive agriculture of an agricultural-industrial nature. As was stressed in the recent party documents, assuring the raw material base for the economy is becoming one of the basic problems of our economic growth and since the prices of raw materials at the world level continue to rise, it is necessary to have traditional and economical use of energy and our domestic resources. In assuring a portion of these resources, agriculture is a powerful reserve for supplying industry with products which may be--and should be--utilized on a high level.

/Text/ As we know, Romania's social-economic development in the 35 years which have passed since the insurrection have meant not only a string of particularly important quantitative accumulations but also real qualitative leaps and important changes in structure in all areas of social-economic life. In our party's concept, the creation of a modern economy and the building of the multilaterally developed socialist society cannot be detached from the building of a complex structure which integrates and harmonizes technical and technical-economic structures with the social-economic structure. Precisely such a structure is capable of assuring high economic efficiency and utilization of raw materials, energy resources and the labor force under optimum conditions and the rational and organic combining of industry and agriculture as the decisive branches of the economy, the maintenance of proportions and balances between the branches which produce raw materials and the processing ones and between the branches which produce the means of production and consumer goods. So a major direction, a more rational and profound one, is given through this basic option to the social division of labor at the macroeconomic and area level and to the territorial division and to the qualitative rise in products and production of them with a high degree of technicity and complex labor, to the growth in social labor productivity and, in the last analysis, to raising the population's standard of living. Deep changes in production relations, the material-technical base, energy and raw material resources, already mentioned, come precisely to complete the real dimension of the changes in the economic structure of Romanian society.

A Structure of the Economy According to the Country's Demands for Progress

Attempting an overall characterization, three main directions could be the sources for forming the new kind of structure in the years of socialist construction, orientations which take into account the specific nature of our conditions. First we note a priority growth in industry's role in the organization of the structure of production overall and branches of the national economy. Worthy to note is not only the rise in industry's share in forming national income--from 30.8 percent in 1938 to 60.7 percent in 1977--but also the important shifts of structure within its subbranches, which have a decisive role in the process of modernizing the technical apparatus of the entire economy.

Table 1: Structure of National Income by Branches of the Economy (%)

	1938	1950	1960	1965	1970	1975	1977
Industry	30.8	44.0	44.1	48.9	58.0	56.2	60.7
Construction	4.4	6.0	9.0	8.0	10.4	7.6	10.7
Agriculture	38.1	27.8	33.0	26.9	18.5	16.0	16.3
Transportation-telecommunications	6.5	4.3	3.8	4.0	6.0	5.8	5.7

Source: "Statistical Yearbook of the Socialist Republic of Romania," 1978, p 88.

So the machine construction industry and the chemical industry, which in the prewar period accounted for only 12.9 percent of Romania's industrial production, last year achieved a 42.2-percent share and, for the future, by the end of the next five-year plan both branches should produce 50 percent of the country's industrial production.

Diversification--of course, within reasonable limits--deepens modernization of the structure by drawing into manufacture those products with a high degree of processing and high technical and technological complexity. The dimensions of the process to renovate, modernize and diversify industrial production also result from the fact that through the introduction of more than 1,100 kinds of machinery, equipment and installations into manufacture, their specific gravity will rise to 44 percent of industrial production in 1980.

A second direction is the relative reduction of agriculture's share in creating the national production but under conditions of the absolute growth in agricultural production and achievement of quality changes in the relationship between subbranches--rise in vegetable and animal production--as well as in their internal components. The national income created in agriculture saw a relative reduction from 27.8 percent in 1950 to 16.3 percent in 1977 but at the same time an absolute growth in net production of 2.5 times was registered, having a particularly important role in development of the national economy. The structure between the two subbranches improved, with regard to the rise in the share of zootechnics from 30.3 percent in 1938 to 41 percent in 1977, with a rising trend to around 50 percent, according to the drafts, by the end of the next decade. Third, considerable changes were produced in the share of other branches of the economy--construction, transportation and telecommunications and so forth--and with an important role in the balanced operation of the entire economic and social organism. In the construction branch, to give an example, stress was placed on the phenomenon of the industrialization of projects through extending the process of the mechanization and typification of construction, which led to a rise in this branch's share in forming national income from 6 percent in 1950 to 10.7 percent in 1977. In the transportation branch, according to the new conditions of development and of extending the domestic and foreign market and our commercial exchanges, and the general flow of goods increased and some changes were produced in favor of sea, automobile and air transport.

Our method of economic growth in the next five-year plan, as results from the draft directives of the 12th party congress, is based on continuing to keep high growth rates under conditions of the stress on the quality aspects and intensification of actions to develop the raw material and energy base and the decisive orientation of efforts toward developing the branches and sectors with reduced energy consumption, intensive development and modernization of agriculture as one of the most important priorities of the five-year plan and achieving a dynamic balance between various branches with regard to the sensible placement of production forces on the land.

Rise in Efficiency in All Areas--A Characteristic Feature of Development

Commitment to a high rate of development and modernization of the structure of the national economy under conditions of a considerable investment effort, which has been mentioned before, raises to the forefront the problem of economic efficiency, of the way social labor, live labor and material labor are spent, and on which in the last analysis the very construction of the socialist society in our country and the rise in the people's standard of living depend. For a long time the problem of economic efficiency in Romania was somewhat neglected, which had many consequences in mobilizing the factors of economic growth and reserves existing in the economy. After the 9th party congress a clear and single concept was worked out regarding the content and direction of this economic category in our society. Taken into consideration was precisely the fact that from the time that social production corresponds to certain real needs, current or long-range ones, it is absolutely natural that all material, financial and human resources which society invests them with should be managed rationally and should contribute to economic and social development and to achievement of the final political goal.

Economic efficiency in our state combines the overall interests of society with those of the local units and enterprises, being a basic source of accumulation and of growth in the population's material well-being, an important and real evaluation of our entire economic activity. In the most concentrated way and in a broad view, our country's economic efficiency may be expressed in a general way by the correlation existing between the means invested for development, material and human resources and the general results of production, as may be observed from an analysis of the indicators presented in Table 2.

Table 2: Correlation Between Indicators of Development and Rise in Romania's National Income in the 1950-1977 period (%)

Years	Factors of Development			Indicators of national income	Marginal coefficients for:		
	Indicators of investment	Fixed capital indicators	Working labor force indicators		Investments	Fixed capital	Working labor force
1950	100	100	100	100	--	--	--
1955	231	125	112	192	1.2	.65	.58
1960	439	161	114	267	1.6	.60	.43
1965	743	223	116	411	1.8	.54	.28
1970	13 times	337	113	597	2.2	.56	.20
1975	22 times	534	121	10 times	2.2	.53	.12
1977	27 times	645	123	12 times	2.2	.54	.10

As results from Table 2, the relationship between factors of development and the rise in national income brings to light several of the more important correlations: a) A powerful commitment of the material factors of economic growth, indicators of investments and fixed capital marking large growth over the base period (26 times, investments and 6.5 times, fixed capital), assuring a high rate at which labor is supplied with fixed capital (5.2 times); 2) Indicators of national income considerably outstrip those of fixed capital and in a more accentuated way outstrip that of working labor force, shaping a certain trend in utilization of fixed capital and sustained growth in social labor productivity; e) Marginal coefficients, as a long-lasting trend, express the behavior of production factors in achieving one unit of national income, the type of technical progress and efficiency. So we find the light rising trend in investment effort for one percent of growth of national income, compensated for by a remarkable lowering of the marginal coefficient for labor force (.58 percent in 1955 and .10 percent in 1977), which is expressed more directly by growth in social labor productivity of 9.8 times in this entire interval. In the 1970-1977 period characterized by a more powerful rate of development and emphasis on the quality aspects, national income doubled, investments extended to the same extent while the labor force recorded only a 4-percent increase. In these conditions one percentage point of increase in national income is obtained only with one percentage point of increase in investments, .95 percent for one percentage point of increase in fixed capital and .52 percent for the labor force, with social labor productivity marking a leap of 1.92 times during the entire interval.

Transposed to a more general level and perhaps a more suggestive one and taking all the labor materialized into the calculation and stored in production, the increase in economic efficiency is reflected by the ratio between the indicators of live labor and labor materialized. This indicator, of maximum generalization, evolved differently in the period we are analyzing, registering a less favorable trend in the first two decades of the postwar period. In the last decade, particularly the last and current five-year plan, due to technical progress and, in particular, the energetic measures undertaken by the decisionmaking factors, the particular ratio was overturned, with the indicators of national income in 1977 compared with 1970 outstripping that of increase in total social product by 4 percent, which clearly means a large saving of social labor.

Integrated into the general concept of efficiency, social labor productivity under our conditions has become a problem of general interest, upon which depend the elimination of economic differences, our transition into the rank of developed countries, broader free time, fulfillment of the human personality and the population's standard of living rise. In the period we are referring to, under the influence of a series of economic, technical, cultural and organizational factors, social labor productivity has evolved at high rates, as may be seen from the following figures (Table 3).

Analysis of the evolution of social labor productivity in Romania overall as well as by branches allows us to formulate some general findings. It is particularly interesting to note that the line of evolution of labor productivity

fits into the same rising typology which characterizes accumulation: in the 1950-1965 period a rise in social labor productivity of nearly 2.6 times corresponded to a reduced share of accumulation while in the 1965-1977 period, to a share of accumulation which was much higher and the indicators of social labor productivity rose 3.8 times. At the same time, it should be mentioned that although special progress was obtained in this area, too, sufficient reserves still exist to increase economic efficiency and social labor productivity in all branches and to reduce material costs, organize production and labor, use working time and raise qualifications and other things.

Table 3: Social Labor Productivity in the 1950-1977 Period
(National income per working person) (in Z)

	1955	1960	1965	1970	1975	1977
TOTAL, of which:	171.4	235.0	254.3	506.0	826.4	975.2
Industry	178.6	258.3	381.7	570.1	771.7	892.8
Construction	100.1	167.5	177.0	242.7	338.6	395.0
Agriculture	161.9	169.0	192.0	210.2	343.5	433.6

Source: Processed according to figures published in "Statistical Yearbook of the Socialist Republic of Romania," 1978, p 93, 106.

In the most general way a comparison of Romania's standard of development with that of other countries may be carried out through per capita national income. As an example, in 1977 a national income of 431.7 billion lei was produced--that is, nearly 20,000 per capita--while social labor productivity as a basic factor of development reached 42,000 lei per capita. However, we should mention that, despite all the indisputable progress obtained in a relatively short time, we are 3-4 times behind the particular productivity being obtained in the countries with developed economies. Our own considerable effort, maintaining a high quota of accumulation and some sustained economic growth rates make the period to eliminate differences compared with the economically developed countries much shorter. In 1938 we were obtaining only \$80 national income per capita, a level which corresponded to a poorly developed country. Currently, although we are achieving a national income which is 13-14 times greater than in 1938, with a per capita income of around \$1,400-\$1,500, we still are among the developing countries; as a result, the economy's evolution continues to be based on sustained growth rates, on carrying out deep qualitative changes. By the middle of the next decade we are to obtain \$2,400-\$2,500 national income per capita, assuring Romania's move into the ranks of countries with an average level of economic development.

Harmonious Distribution of Production Forces on the Territory

The Romanian model for economic growth organically caused changes in the territorial structures from various viewpoints: economic, social and demographic. The major meaning of these options, first, was to combine the economic optimum with the social and demographic at the macro and zone level, which under the conditions of economic and social efficiency of long duration would lead to

rational utilization of material and human resources of each zone and to drawing them into the country's general progress. Within the general strategy of party and state policy, under conditions of the rapid upsurge of production forces, improvement of the material-technical base and placement of economic and social projects on the territory and within a national program to raise up the zones which had lagged behind in the past, the deep differences in territorial development have been eliminated, seeking gradual equalization of the levels of development of all counties.

The economic rise of the counties cannot mean a linear process of absolute and uniform equalization--that is, to encourage a reproduction of the overall structure of the economy in each zone, region or county. On the contrary, proceeding from the national division of labor, under the varying conditions of the zones, it is being sought to assure a relatively diversified structure from an economic viewpoint, to a greater extent socially homogenized and organically integrated into the national economic complex. Through the investment policy it is precisely the consistent rise of the zones and counties which lagged behind in the past which is being kept in mind by drawing the natural and labor resources into economic circulation from the various locations, bringing closer together as effectively as possible the production centers for resources of raw materials, energy and fuel and consumption centers. Examined in a systematic concept from the angle of economic and social efficiency and in a broader perspective, territorial development is seeking to maintain a balance and some basic proportions between industry and agriculture in a zonal structure, a rational structure of the population by rural and urban environments, reduction in the population's territorial mobility to the minimum needed and in the last analysis homogenization of the income level and in general the degree of civilization and culture of people all over the country.

Through the investment policy directed toward raising the zones which lagged behind in the past, a much higher rate is involved in these counties with a lower percentage of industry. For example, in 1977 compared with 1965, for an average increase in volume of total production for the country of 4 times, a more accentuated increase was recorded in the counties which lagged behind in the past: Olc (10 times), Puzau (8.5 times), Arges (7.4 times), Ialomita (6 times), Iasi (6.6 times), Salaj (7.4 times), Vilcea (6.4 times), Vaslui (5.3 times), Teleorman (5.6 times), Mehedinti (5.4 times), Harghita (4 times), Buz (3 times), Covasna (3.2 times), Botosani (4.1 times). Within the policy of distribution of the production forces on the territory, new typologies have been formed, which expresses the complex process of bringing closer together the development levels of the zones (Table 4).

The first group, formed of six counties and Bucharest Municipality, which includes the development and modernization of some old industrial hearths but also the creation of some industrialized new zones (Arges, Galati), have one-fourth of the total population and more than a 40-percent share of the country's industrial production, also having a degree of urbanization which on the average is close to that of the economically advanced countries (72 percent). It should be noted that of the total product of industry and agriculture added in one place, 95 percent is represented by industrial production, with this zone having a pronouncedly industrial nature.

Table 4: Typology of Romanian Counties in 1977, According to Value of Per Capita Industrial Production

	Number of Counties	Total Population	Total indus- trial produc- tion (millions)	Total agricul- tural produc- tion (millions)	%	Urban popula- tion	%
Total-Romania	40	21,657,600	100	753.8	100	10,362,300	100
I. Counties with relative- ly high degree compared with country average (above 50,000 lei index trial production per capita) ¹	7	5,582,000	25.8	326.2	43.2	17	13.6
II. Counties with average degree of industrialization (25,000-50,000 lei) ²	19	10,404,000	48	332.2	44	65	52.1
III. Less industrialized counties (below 25,000 lei) ³	14	5,671,600	26.2	95.4	12.7	42.7	34.3
						1,628,100	15.7

1. Brasov, Galati, Bucharest, Sibiu, Arges, Prahova, Hamedoara
2. Mures, Timis, Caras-Severin, Braila, Cluj, Bacau, Neamt, Dimhovia, Olt, Arad, Bihor, Constanta, Alba, Maramures, Dolj, Iasi, Buzau, Harghita, Covasna
3. Satu-Mare, Mehedinti, Gorj, Suceava, Ialomita, Teleorman, Tulcea, Salaj, Vilcea, Vaslui, Ilfov, Botosani, Bistrita-Nasaud, Vrancea

The second group includes 19 counties with an average degree of industrialization, which has 48 percent of the country's population and 44 percent of industrial production, having an average degree of urbanization of 45.4 percent, which is lower; this group has an industrial-agrarian nature.

The third group includes 14 counties with a relatively lower degree of industrialization and it obtains an average of 17,000 lei in industrial production per capita and has 26.2 percent of the country's population and a low degree of urbanization (28.8 percent), with an agrarian-industrial nature. Seeking the multilateral rise of all the country's zones and the more emphasized homogenization of development of production forces, as forecast in the draft directives of the 12th party congress, in mind is the achievement of a total production of at least 70,000 lei annually in 1985 per capita (for the branches of material production and services).

More and More Active Participation in the World Exchange of Values

Romania, as a developing country in the full process of regenerating its social-economic structures, is giving special attention to foreign commercial exchanges and to production and scientific-technical cooperation with other countries, problems in the center of the general policy of building the socialist society. Economic development is closely interdependent on the rate and structure of foreign economic relations. The way our economy adapts to the behavior of the world exchange market aims in several important directions. First, it is a matter of an increase in production potential and the economy's capacity and competitiveness with other countries and of broadening the effective base for extending foreign trade and, in general, economic exchange relations. This new dimension may also be shown by the fact that in the current five-year plan the value of foreign trade rises to nearly one-third of our national income. The considerable rise in commercial exchanges with the socialist countries, with the developing countries and all countries is another basic direction of our foreign trade. Romania's participation in world economic circulation, expressed through the foreign trade volume was 25.5 times greater in 1977 than in 1950.

A third direction, a particularly important one and one which directly characterizes the changes which have been produced in the qualitative aspects of the Romanian economy, aims at the important changes which have taken place in the structuring of exports and the rise in the share of industrialized products (equipment and machinery from 4.2 percent in 1950 to 26.8 percent in 1977, industrial broad consumer goods—from 1.3 to 16.8 percent) and reduction in the share of imported raw materials to what is strictly necessary. Of course, the way that the complex needs of the national economy are covered in certain stages of our development gives a certain significance to the indicators of independence of export or dependence of import, whose value of knowledge today is growing considerably under the conditions of the energy and raw material crisis. For example, in 1977 the indicators of independence of export for a series of large groups of goods requested on the international market were favorable for us, with the export exceeding import by several times for some large industrial and broad consumer goods. At the same time, our needs for development and modernization still require us to keep some indicators of dependence of import.

Increasingly greater adaptation of our economy to the world market requirements in accordance with the country's current and future interests requires continued intensification of commercial exchanges and cooperation in production and scientific-technical cooperation, superior utilization of our products on foreign markets, improvement in the foreign trade structure, increase in its efficiency, assurance of a convenient balance between export and import with a view to achieving a commercial balance and a balance of active foreign payments--orientations of great importance provided in the draft directives of the 12th party congress.

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/Text/ Romanian society, in full development and modernization, is uncovering many problems of interdependence between economic growth and demoeconomic structures. The scientific-technical revolution has imposed new demands on development, raising to a new level the relationship between simple and complex labor, between physical and intellectual labor. This also is the reasoning for which fulfillment of the great goals of our development and assurance of the material and spiritual process which the country is involved in decisively depend on the formation and continued training of cadres and on rational utilization of labor resources.

In the period we are referring to, complex development of the economy at a rapid rate has brought basic changes to the demoeconomic structure and to a more rational distribution of the labor force by branches of the economy and by zone and to systematically raising vocational training as well as with regard to the more and more judicious use of all the population's working time. This broad process, with important implications, is taking place under a double aspect: On one hand, it includes the quantitative aspects of the powerful attraction of human resources into the circuit of development and rise in their degree of occupation; on the other hand, it aims at the quality aspects of raising vocational qualifications, a trend which becomes more profound according to the changes continually being produced in technology and in the economy. It is known that under our country's conditions the sure guarantee for total use of labor resources is industrialization, which has opened a broad field of opportunities for employing the labor force and drawing the population into useful activity with high productivity.

Superior Utilization of Labor Resources

The development of industry, stimulated by the policy of accumulation and investments, first has broadened the production potential, creating a broad base for establishing new jobs, mainly in the industrial branches. Several significant aspects bring to light the basic options and orientations in the way human resources are utilized. What is noted from the start is the large number of jobs created and the uninterrupted capacity to be absorbed by the economy. In this framework, of the approximately 5 million jobs established or reorganized in the 1951-1977 period, nearly 80 percent belong to the branches of material production, where industry is in first place (2.3 million jobs).

This firm orientation in the option of development led to elimination of unemployment even in the first years of socialist construction, giving new significance to utilization of the country's labor resources, rightfully considered the most valuable national wealth. At the same time, under the conditions of the reorganization and intensive growth of agriculture, the creation of a new, more reasonable, dynamic balance was sought in the utilization of the country's human resources.

Analysis of the growth rate of the number of jobs by subperiods brings about some correlations, whose significance could explain more thoroughly some aspects of the stages of the country's industrialization process. In the first period, which includes the 1951-1960 decade, approximately 440,000 places were created in industry, which was an average of 220,000 places in each five-year plan. In the second stage, belonging to the 1961-1970 decade, the number doubled--836,000 jobs compared with the preceding decade. In the third stage, which corresponds to the 1971-1980 decade, the greatest number of jobs in industry was reached, much exceeding the total number of jobs created in this branch since the start of socialist construction. At the same time a new orientation also was produced in distribution of jobs, aimed in at least two directions: a) complex branches and b) more judicious distribution of them on the land, affecting the labor force's pattern of migration.

Under these conditions, important changes organically linked with socio-vocational typologies were produced in the population structure under these conditions. As results from Table 1, we see a powerful structural shift toward industry and construction and to a large extent also toward the tertiary sector, together with a considerable reduction in population working in agriculture. Important changes also were produced within the branch, actually being associated with the changes which took place in the very structure of industry. In 1938, for example, the share of population working in the machine construction industry and metallurgy did not exceed more than 17 percent of the total, while in 1977 it would rise to 40 percent of the total industrial population, thus bringing to light the guidelines for a new typology of vocational structure which corresponds to the directions of contemporary technical progress.

Table 1: Structure of Working Population by Sectors of the Economy (in %)

	1950	1955	1960	1965	1970	1975	1977
Total working population,	100	100	100	100	100	100	100
% of which are in sector:							
Primary	74.3	69.7	65.6	56.7	49.3	38.1	34.7
Secondary	14.2	17.4	20.0	25.5	30.8	38.7	41.5
Tertiary	11.5	12.9	14.4	17.8	19.9	23.2	23.8

Source: Calculated according to "Statistical Yearbook," 1978.

In agriculture, too, under conditions of an absolute and relative reduction in working population, we see a better distribution of the labor force by subbranches with regard to the increase in number of personnel working in

zootechnics and activities connected with the modernization of this branch and in water improvement projects, mechanization and so forth.

The direction for the reorganization of the labor force and the directions for placing it in the new branches in the postwar years brings out some interesting aspects regarding the way the new social structures were formed and their interdependence. Particularly for Romania there is interest in the fact that better than half of the labor force which left agriculture is basically still working for agricultural food production but in the industrial branches which resulted in time from traditional agriculture and is the new sector in close interdependence with agriculture and with the branches upstream and down. This fact opens broad opportunities for even more judicious placement of the agricultural-industrial projects on the territory and increasingly broader conditions for rural development and modernization and for reducing migration from the village to the city.

A characteristic of our demoeconomic structure, as we know, is the attraction of women into production activity. In the recent period woman's role and importance has grown in social-economic activity. Currently women form 36.2 percent of total working personnel, with their share being very important in health protection and social assistance (74 percent), education, culture and art (64.3 percent), goods circulation (54.8 percent). Of course, it is an aspect which does not conflict with the rising trend of woman's role in the branches of material production such as, for example, industry, where the female labor force has reached 37.8 percent of total personnel.

Our country's conditions require that women continue to be drawn into social-economic activities. It should be noted that women's share in total labor resources, according to the drafts, is to rise to 45 percent by 1990. This orientation aims at assuring real conditions for fulfilling woman's human aspirations and increasing her role in society. The process of feminizing labor resources, of course, also raises some new problems for society: The organization of the women's working program, facilitating their work, reducing the workweek on a priority basis, dividing the women's working and rest time rationally; these are problems in the center of concern for the party and state leadership.

New Sociovocational Structures

Sector and territorial structures, which we have mentioned above, are organically linked with the sociovocational structures and the continued rise in the quality of the labor force has been and is a decisive factor in the intensive development and modernization of the economy. "We all must learn," Comrade Nicolae Ceausescu stressed at the July 1979 RCP Central Committee Plenum, "if we want to fulfill the tasks entrusted to us in one area or another under good conditions, including in production. Without learning, without being up on new knowledge in one area or another, nobody can fulfill his duty the way he should."

In this direction, school as the main source of education and culture, of shaping the new generations, of the scientific-technical formation and training of cadres at the level of demands of social and economic progress gains

particular importance. Important results have been obtained in Romania in the formation and modernization of social-vocational structure. A first step was the elimination of illiteracy, an action concluded even in the first years of socialist construction. Following this was the considerable extension of elementary, secondary and higher education, registering a true "school explosion." Generalization of 10-year education, currently completed, as well as conclusion of the generalization of 12-year education which follows in the coming period raise and will raise to an even greater extent the level of the young generation's general culture; on this base the opportunity to assimilate technical and economic knowledge and to master a high and diversified qualification in step with the economy's demands will broaden even more.

In the postwar period Romania's industrial profile powerfully entailed vocational and technical education, which trained many qualified worker cadres and technicians for the most diverse production activities and from here also came a new orientation in the direction of forming and training technical cadres with higher studies. Whereas in 1938 only 14.7 percent of young people were following a technical specialization, today this percent is rising to more than 50 percent. The dimension of this effort can also be explained by the fact that in this five-year plan the number of pupils and students is around 4.5 million, while 1 million workers are receiving a new qualification in various sectors of industry and the economy. In the years we are referring to, along with hundreds of thousands of workers and technicians with a high degree of qualification, thousands of cadres of engineers, doctors, economists and so forth also were formed and presented to the economy. The relative youth of these cadres can be important if we bear in mind that 90 percent of our cadres with higher studies was formed in the years following 23 August 1944. The fact which our country's experience as well as that of other countries show and which should be stressed is that educational investments are no less important than economic investments and that there is a close correlation between the level of the resources of education, growth in labor productivity and national income, as may be seen from the figures in Table 2.

Table 2: Relationship Between Indicators of National Income, Economic Investments and Education (%)

	1965	1970	1975	1976	1977
National income	100	145	247	273	297
Fixed capital put into operation	100	175.9	315.2	325.0	347.4
Expenses for education	100	141.5	197.3	221.4	234.1
Pupils and students enrolled	100	104.5	114.0	118.5	120.3
Fixed capital put into operation					
Pupils and students enrolled	100	168.5	276.5	274.4	287.3
Expenses for education					
Pupils and students enrolled	100	135.5	173.1	186.8	193.8

Source: Calculated according to "Statistical Yearbook," 1978.

A first conclusion resulting from an examination of the above indicators is the close correlation existing between the degree of technical supply of the economy, educational investments and growth in national income. So the expenses for education rose 2.35 times while fixed capital put into operation increased nearly 3.5 times, resulting in a marginal coefficient of educational investments of .68 percent; this means that an increase in expenses for education of two-thirds of a percent was needed for a 1-percent increase in technical supply of the economy. Also, in the period examined expenses for education rose faster than the number of pupils and students, raising "the cost" of training one specialist, which basically expresses the complexity of the vocational structure required by the new conditions of progress. However, the particular advancement was compensated for by the growth in national income, which in this period nearly tripled, which means that for the percentage point of increase in expenses for education, the national income--without taking other factors into calculation also--rose 1.26 times.

The rise in the technical level of production in all branches of the national economy associated with training of cadres and rise in the cultural level of the entire population, created a new balance between simple and complex labor and between physical and intellectual labor within the structure of the population by professions and trades. In this regard one may get a picture by taking into account that in the last population census (1977 more than 2,600 occupations were recorded (there were several hundred in 1938) with important shares in the modern branches of industry, which expresses without question the degree of diversification of the professions and the profound transformations in the economy and in the social structures.

It still should be stated that currently more than 80 percent of the total number of workers are qualified, while their specific weight in the highly complex subbranches--machine construction, electric power and chemistry--is much greater. At the same time, a large percentage of the country's active population possesses a qualification which corresponds to secondary and higher training. In 1978, for example, more than 100,000 engineers and technicians were working in industry. In the same year, nearly 39,000 agricultural specialists with secondary and higher studies, agronomists, zootechnicians, veterinarians, mechanical engineers and economists were working in agriculture. If we add to what has been shown above the considerable extension of permanent education through advanced training courses, specialization, apprenticeships, post-graduate courses, in which nearly 10 million people participated in the 1971-1975 five-year plan, we get a more comprehensive picture of the educational effort.

Of course, the problem of the qualification and formation of cadres should be analyzed not only statically but also thought out in its evolution and progress in order to be able to explain the current specific features and to clarify the resultant trends. In this regard, according to a specially adopted program, in the 1976-1990 period more than 6 million cadres are to be trained, of which 5 million are qualified workers with a broad profile of training, polyqualification and reasonable mobility of the trades within the limits imposed by technical progress. If it is taken into account that approximately 65 percent of these cadres are to be trained directly through the

schools, it is easy to understand the increasingly larger role which education has in increasing the educational reserves and assuring the country's progress.

More Efficient Utilization of the National Reserve of Time

Sectorial changes through substantial shifts of the population working in agriculture in nonagricultural branches, primarily industrial, beyond other positive implications, have had a direct effect on the considerable saving of social labor. Estimated calculations, which we present below (Table 3), of course interpreted with appropriate prudence, precisely confirm a basic evaluation of the progress achieved in quantitative terms.

Table 3: Progress and Structure of National Reserve of Time
(Orientative calculations)*

	1 9 5 0	1 9 7 7
	Working population	Working pop.
	time (man-days)	time (man-days)
Total	8,377,200	10,264,300
Primary	6,208,700	3,529,600
Secondary	1,187,000	4,257,500
Tertiary	981,500	2,477,200

* Included in the primary sector is agriculture; in the secondary sector--industry and construction; in the tertiary--other branches. Considered as usable working time is that which generally can be used and not that actually used. It was taken in the calculation as an average annual 290 days for the secondary and tertiary sectors and 150-200 days for the primary sector, differentiated by periods.

We see from the table's figures that in the 1951-1977 period our country's national reserve of time rose by 1.1 billion man-days (equal to around 4 million workers) as a result of the increase in working population on one hand and better utilization of working time on the national scale as a result of modernization of the sectorial and sociovocational structure on the other. A calculation shows us that by the population's move from agriculture into the industrial branches society gained around 500 million man-days or a conventional equivalent of approximately 2 million workers. This particularly important saving was a basic factor in the growth of social labor productivity and rise in all the people's standard of living. Emphasis on the intensive and qualitative aspects of our economy, of course, raises new demands in the use of human potential at all its value and in increasing educational reserves and increasing the degree of qualification and so forth.

Making an overall analysis of the basic changes in our country's social-economic structure in the years of socialist construction, we should not bypass the fact that, being a matter of particularly dynamic and complex changes, the formation of new social-economic structures does not take place within a process without difficulties. The joining of rapid economic development with the need for creating new balances raises problems connected with

maintaining a balanced structure of labor resources by branches, particularly for agriculture, optimization of the migratory village-city flows, the need for rapid growth in cadre qualification and, in general, the population's adaptation to the new conditions required by social and technical progress. Through the complex development of Romania in the coming years, predicted by the guidelines and directing lines which will be adopted by the 12th party congress, without a doubt deep qualitative changes are to be expected in the material-technical base and in the economic and vocational structure and so forth, being reflected by some of the most important effects in the increase in the quality of life.

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BETTER UTILIZATION OF UNDERGROUND ENERGY RESOURCES

Bucharest ERA SOCIALISTA in Romanian No 19, 5 Oct 79 pp 14-17

[Article by Dr Engr Florea Neagu: "The Better Utilization of Underground Resources"]

[Text] The Draft Directives of the 12th Congress of the Romanian Communist Party: "In the current stage, the expansion and sensible management of our base of raw materials and energy constitute a basic condition for developing the whole economy at a high rate and ensuring the general progress of society."

The economic development that our country has experienced as a result of the rapid rate of industrialization is characterized by the intense utilization of natural resources of fuels and raw materials, with our extractive industry becoming a basic branch of production.

In the draft directives of the 12th party congress provision is made for strong growth of the extractive industry, at an average annual rate of 4.5-4.9 percent, with a special accent being put on the mining of coal—which will reach 85-88.3 million tons in 1985—and on the introduction of bituminous shale into the energy circuit at a capacity of 15-16.5 million tons per year. In addition, new deposits of ferrous and nonferrous ores and other substances will be put in use. The dominant idea of the draft directives with regard to the development of the extractive industry in the 1981-1985 five-year period and afterward is the rationality of the group of activities connected with the exploitation of deposits, which means, in other words, the protection of resources and the complex utilization of them.

Generally speaking, the modernization of industrial production in recent years has caused better, more efficient utilization of natural resources. However, the strong growth of the extractive industry, favored by the development of the whole system of the national economy, does not represent a one-way process, one of influence only by the economy on this branch, but also, conversely, the extractive industry—by means of the role that it has in furnishing raw materials and energy resources to the processing sectors—

decisively influences, in its turn, the evolution of the whole economic and social organism.

In connection with these latter aspects and in relation to the future problems of the extractive industry, we feel that a look at the past is of interest. If we take the combined production of all mines, oil derricks, quarries and so on as an indicator of the achievements in the field of utilization of resources of mineral raw materials, it is noted that about 10 million tons of equivalent mass of mining products were extracted in 1948, the year of the nationalization of Romanian industry. In the course of a decade and a half, more precisely, in 1965, the annual mining production rose to 100 million equivalent tons of useful mineral substances, and now it has reached 135 million tons. Consequently, it clearly follows that a primary characteristic trait that our extractive industry now has is given by the great volume of production that it has attained. But, along with this extensive character of development, the high growth of mining production in the last three decades also has another essential trait. It is a question of the structure of the production of useful mineral substances, which has experienced continual diversification. Thus, while the petroleum-extracting industry constituted the only subbranch with advanced technology in the first years after the war, many useful substances are now extracted, processed and utilized by means of modern, highly efficient technologies.

In fact, the present high level of production, more than 135 million equivalent tons of useful mineral substances that are extracted annually, marks a time of transition from extensive development to intensive development of the Romanian mining industry. We believe that starting precisely from the qualitative significance of this transition the past experience ought to be analyzed and, on its basis, the future problems evaluated.

The leap from production measurable in units of millions of tons of mining mass, in the period of postwar reconstruction, to the present-day production, far above 100 million tons, went through several important stages. A short period of reconstruction up to the nationalization of industry, after which the socialist development of the existing capacities followed, in the period of the first two five-year plans, and then the strong growth beginning in the '60's, with its extensive specific character, when the old capacities were expanded as much as the volume of reserves allowed, concomitant with the opening of the many new deposits analyzed and introduced into the industrial circuit. In this latter period--of maturity, as we could call it, of the Romanian mining industry--our country ceased to be an importer of mining engineering and technical resources and began to export products, technologies and services in the extractive field that, years ago, it was in the position of procuring abroad.

The problems of complex utilization of reserves and of rationality in exploitation, in other words, of growth in efficiency in extractive activities as a whole, strongly imposed themselves, particularly in the last decade. On the one hand, it is a question of the utilization of underground reserves

that were formerly situated on a secondary plane in terms of importance. Such is the case with lignite or bituminous shale, for example, which began to be utilized intensely in our country in the period when the development of world energy was based almost exclusively on petroleum and natural gas. On the other hand, the greater consumption requirements necessitated the orientation toward raising the degree of recovery of reserves from the deposit through the continual improvement of the extraction technologies.

All the more in the 1981-1985 five-year period and in ensuing years—as is indicated in the draft directives of the 12th party congress and in the draft directive program for research and development in the field of energy in the 1981-1990 period and the main orientations up to the year 2000—there will be posed in the most acute way the problem of the transition of the mining technologies to intensive methods of exploitation, processing and organization, with the existing experience being used and developed in proportion to the greater and greater requirements. For example, the mining of lignite on the surface and in a continual flow with equipment of high productivity considerably raises the degree of recovery of the deposit. In addition, through the introduction of a new method of operation in salt mines (the "small chamber" method) the degree of recovery of salt reserves rises by a factor of over 2.

The rates of development of our extractive industry and the trends of this development show that the vast problems that are raised for the next stage do not find here a corps of untried specialists.

The New Problems Correlated With the Improvement of the Organization and Management of Production

The distinctive trait of our economic and social evolution in the 1981-1985 period and in the following stages is intensive development with maximum rationality on all planes of activity. In the extractive industry, such a mode of development is required all the more because the limited character of the underground resources—whether it is a question of mineral raw materials or of energy bearers—makes it necessary to exploit them as efficiently as possible from the angle of recovery and protection.

The next five-year period will mark a strong growth of industry as a whole, including the extractive industry. For example, by means of the 85-88.3 million tons of coal mined annually, Romania will be situated, in terms of per capita coal production, among the countries with a developed mining industry. Unit capacities of 12-16 million tons of ore per year, as will be those at the quarries for copper ore or bituminous shale, are encountered in only a few places on the globe.

The strong development of the extractive industry also requires, along with more and more technical resources with higher and higher performances, a great effort of conception and innovation and of better organization of the different activities involved—an effort in which the researchers, the designers, the managers of production processes, and all working people in this

branch are to participate. We have in mind organization in the sense of the general modernization of the production process—regarded as a chain of activities beginning with the forecasting studies and ending with the delivery of the extractive industry's products to the economy. This organization must be adapted to, above all, the intensive character of production. In fact, the intensive character in the development of the extractive industry—which will be accentuated strongly in the future—is necessitated by the very conditions under which the production processes now occur, conditions that differ radically from those of just a few decades ago. The huge units, in which a greater number of workers and specialists with greatly diversified professions work, have taken the place of the small units.

Starting from the imperative of intensive development of the extractive industry, we feel that the as complete utilization as possible of reserves in deposits—becoming a problem of a priority order as a result of the need to utilize the existing resources with maximum efficiency—should constitute a main criterion in judging the way in which production is organized and managed in a mine or on an oil derrick. Moreover, it must be mentioned that in some countries people turned long ago to judging the way in which mining operations are organized and managed primarily according to the size of the factor of recovery of reserves from deposits. In this regard, scientific research and technological design must be closer to the concrete problems of production, in order to quickly find and apply solutions that correspond as well as possible to the diversity of conditions under which the mining operation is done. The great variety of these conditions—determined by the exploitation of one substance or another, by the characteristics of the deposit, by the economic situation, and so on—necessitates greater flexibility in organizing the production units, for the optimum adaptation of them to the concrete needs of production. This is all the more necessary under the conditions of intensive development of our mining industry, because the established forms of organization, although initially they can prove efficient, become in time—due to the inherent changes that occur in the extraction processes—true obstacles to the improvement of the organizational forms and structures of production.

Of course, we do not have in mind reorganizations with a character of improvisation, done under the pressure of the moment, because most of the time they lead to temporary, improvised solutions, lacking perspective—and, consequently, they must be combated. Likewise, too, the disparate devising of the technological solutions, not correlated with the organizational ones, does not raise the efficiency of the production processes as a whole but, on the contrary, can be transformed into an obstacle for the proper organization and management of them. Consequently, we feel that the continual improvement of the organization and management of production, as a means of growth, has to be combined very closely with the activities of scientific research and technological development—with the speedup of the stage of studies and research being decisive in this regard.

At the same time, the better organization of all of the activities in the extractive industry and their efficiency now depend greatly on the improvement

of the work force in all component links of the research-design-production chain. The work apparatus in geological prospecting and exploration, on a par with the methods of investigation of great scientific refinement, and the drilling and extraction equipment for petroleum and gas or that for underground or surface extraction used in mining production, on whose efficient utilization the performances of the extractive industry depend, require thorough professional training, in step with the rate of improvement of the methods of work and of organization of labor. The extractive branch, although traditional in the basic technological procedures, is now experiencing frequent innovations in equipment and apparatus of all kinds, which necessitates the retraining of workers, the updating of professional knowledge. The activity of professional improvement in the extractive industry must itself become--under the conditions of intensive development of production--a way to seek improvements in the work performances and to improve the organization of the work processes.

Priorities in Research and Design

The requirements for raising the national potential for energy and raw materials necessitate the establishment of the methods of better utilization of deposits against the background of the realities in the branch, of the specific character of the mineral resource and of the technological conditions for exploiting one mining area or another. This makes necessary a unity of conception and action of the research and design organizations and the decisionmaking forums in the sphere of production. Such a unity of conception starts not from the mere juxtaposition of precepts, of general orientations, but from a continual confrontation of ideas, by means of syntheses elaborated with such attention.

The solving of the many and complex problems of mining engineering that are raised in the future must be based on a constant activity of research and design, to which goes the duty of intervening innovatively in the development of the extraction processes. Because, while the role of research and design activities in the period of extensive development, to which we referred earlier, consisted, in essence, of ensuring the operation of production capacities with relatively easily assimilable technologies in relation to the volume of the reserves, the mission of these activities is now to devise maximally efficient methods of exploitation and processing that lead to a continual rise in the factor of recovery of useful material from reserves.

Under the present conditions, a rise in the recovery factor in exploiting a deposit takes on great importance, with this rise being equivalent, in fact, to the discovery of new reserves of mineral resources. For example, if a new operating procedure that also permits the extraction of thus far inaccessible reserves were applied at a lignite deposit--which usually has reserves located above the hydrostatic level, which can be extracted relatively easily, but also reserves located below the hydrostatic level, the latter now being unrecoverable in general--then, clearly, this would be equivalent to the discovery of a new deposit. Likewise, if the mining of lignite by means of methods

of underground extraction leads to a recovery of reserves on the order of 35-65 percent, the same deposit mined by means of open-pit work—as proves possible in some cases—greatly raises the degree of recovery, sometimes even to double. Similar examples could be given with regard to any mineral substance.

In fact, the whole history of the technologies for mining extraction and processing shows that the line of technical progress has continually followed the growth of the factor of recovery of natural reserves and that the value of this factor is continually rising—its limit being, theoretically speaking, 100 percent. Of course, the attainment of this limit is extremely hard to achieve in practice, but a closer and closer approach to it is the very purpose of the activity that the scientific and technical people in the extractive branch are performing. This is precisely why we feel that the establishment of a certain final factor of recovery of deposits—such as that of 25-40 percent in the case of petroleum deposits—should be understood not as an uncrossable threshold but as a value with an orientative character determined by the performances of the present technologies and methods of extraction of underground resources. The role of research and design activities is to seek new solutions for continually raising the degree of recovery of ores, abandoning the beaten paths of the technologies known and used at present, by means of which a significant part of the reserves in deposits still remains unutilized.

Generally speaking, research and design find their finalization in the application to production of the results of searches not rarely persevering and careful. Under the conditions of the new stage, it would be necessary, in our opinion, to establish a minimum value of the factor of recovery of deposits, a value that is to be attained on the basis of the technological studies and research undertaken—as a qualitative indicator of extractive activity and of control over the respecting of work techniques. At the same time, the adoption of such a criterion for judging the work of conceiving and managing the production processes in the extractive industry would constitute a premise for more efficiently affirming the long-term view in research and in management of the operations.

In connection with the above, it must be taken into account that there are no general formulas, no universally valid technologies for extracting any substance, for exploiting any deposit, but that solutions specific to each particular case can be found and applied only by means of continual and thorough research. Therefore—as is pointed out in the draft directive program for research and development in the field of energy in the 1981-1985 period and the main orientations up to the year 2000—multidisciplinary research, a multilateral approach to each deposit and, on this basis, to the different kinds of substances or types of deposits, constitutes the work method on which the whole activity of research and design in this field must be based.

The matter of introducing into the economic circuit mineral deposits with a poorer and poorer content of useful substances, hence exploitable under more

and more complicated technological conditions of extraction and preparation, also constitutes a priority direction of concerns for researchers and designers. With the worsening of the extracting conditions, as well as the economic conditions through the growth of the cost of the extracted products, technological engineering and research have the duty to find the technical and organizational counterweight, so that the production process remains profitable on the whole. The technical and organizational conception of the extractive process has to adopt solutions that reduce the influence of the above-mentioned conditions on the efficiency indicators, taking into account, at the same time, also the influence of the energy and raw-material crisis and its direct implications regarding the level of consumption and of prices. All these aspects accent even more the need for qualitative development and for growth in the efficiency of scientific research and technological engineering in the extractive branch.

Considering the major importance of these activities in the next five-year period, some aspects referring to the as suitable organization of them as possible are also raised. The present system of organization, which permits each central in the extractive industry to have a research and design institute of its own, oriented in accordance with the specific character of the production technology, undoubtedly has--as was also intended initially--the advantage of bringing the activities of conception and development closer to the production units. Another advantage of including the technological engineering and research units in the organizational structure of the centrals consists of the greater promptness with which these units can respond to the needs of the central to which they belong, especially with regard to current problems of production and investment. Instead, however, these research and design institutes of the centrals manage to respond only slightly to general orientations specific to the extractive industry, in order to provide for the speedup of the activities of research and design with regard to the devising and typification of processes and technologies or other engineering activities characteristic of the branch. In our opinion, it would be useful for research that has such a characteristic and involves the whole extractive branch to be grouped within a specialized technological central institute. Because, otherwise, the technological problems of the greatest interest to our mining industry will inevitably be broken up and taken over, by means of compromise solutions, by other research units that do not have either the proper specific character or the necessary capacity for this purpose.

Returning to the quality of the activity of scientific research and technological engineering, I feel that the decisive role of the human factor must be stressed, a role that will be accented all the more in the next stage--under the conditions in which, along with the problems posed by immediate economic and social development, research must pose itself new, long-range problems. In general, it is felt that the level of research work is determined by the available human scientific potential and by the degree of technical-material equipping. In our opinion, however, along with the two above-mentioned components, the proper organization of the activity of the researchers and designers is at least just as important. Because only by means

of proper organization along the whole research-design-production chain is it possible to truly utilize the scientific and technical potential that we possess, thus stimulating this activity and combating with all possible firmness, as Comrade Nicolae Ceausescu pointed out at the recent work conference of the RCP Central Committee, the mistrust in the capacity of our scientific and technical people to solve the problems raised by production.

The success of the research or design unit and, ultimately, the success of the branch can depend only on the achievements of each particular specialist, engaged in a continual creative competition with himself and with his colleagues. This is precisely why we feel that the clear delimitation of the responsibility and the careful judging of the contribution of each researcher or designer represent a basic condition for organizing scientific activity as efficiently as possible.

The responsibility and the social sanction of the act of creation in science and technology constitute the torque of technological progress in which a very large number of specialists are now engaged. The necessity of discerning the true values in this field and the promotion and stimulation of them in accordance with the basic principle of equity and justice that is the basis for interhuman relations in our society thus seem evident. The researcher or designer must know precisely what objective or subject he is directly and personally responsible for and, at the same time, that he will have as author the success or failure of his activity on him and not on another. Otherwise, any form of organization, however it may be bolstered with regulations and organizational diagrams, will only be ground for avoiding responsibility and, as a consequence, for maintaining low efficiency.

The providing of a new quality to all links of the activity in the extractive industry requires, as was pointed out at the joint plenum of the Central Committee of the Romanian Communist Party and the Supreme Council for Economic and Social Development of Romania in July of this year, profoundly innovative changes, caused by the introduction into production of the newest gains of science and technology in this field. At the same time, the geological prospecting for and the utilization of underground resources must be achieved from a unified viewpoint and in a unified organizational framework—starting from the urgent necessity of continually strengthening the potential of our natural resources of energy bearers and raw materials, under the conditions of the manifestation of the well-known phenomena of shortage that are occurring on a world level.

In consequence, the raising of the activity in the extractive branch to the level of the requirements of the next five-year plan necessitates the continual improvement of the technological processes and of all activities of prospecting for and exploitation of the available resources, with precise responsibilities being established according to production zones and phases, with a view to the protection of deposits and the maximum recovery of reserves.

ACTIVITY OF COMPUTER MAINTENANCE ENTERPRISE DESCRIBED

Bucharest ERA SOCIALISTA in Romanian No 19, 5 Oct 79 pp 52-55

[Article by Engr Cornel Moldovan, director of the Enterprise for Maintenance and Repair of Computer and Professional Electronic Equipment: "Preventive Maintenance on Computer Technology, Put at the Service of the National Economy"]

[Text] In the years of socialist construction, the automation of the production processes and the wide-scale introduction of computer technology represent decisive factors in the affirmation of the scientific and technical revolution, with implications regarding the economic and social prospect and development of our country.

It has become a reality that informational tools are part of the life of the economic units, are active presences in the big combines, in industrial centrals, in education, contributing to the direct or indirect management of the technological processes through the processing of informational data, providing a continual rise in economic efficiency and in productivity and a speedup of the whole economic and financial mechanism.

The proper functioning of computer equipment and of the highly complex information network and the maintenance and repair of equipment are continually pursued, with a scheduled frequency arranged with customers, by our enterprise, called in short the IIEUC [Enterprise for Maintenance and Repair of Computer and Professional Electronic Equipment], a specialized service unit with central headquarters in the capital.

Making a retrospective of the activity, we note that the IIEUC was founded in 1968. In a short time, our unit managed to be present, in fact, throughout the country by means of the seven territorial sections: Muntenia, Oltenia, Banat, Transylvania (two), Moldavia and Dobruja, with headquarters in Bucharest, Iasi, Craiova, Brasov, Cluj-Napoca and Timisoara. By the end of 1985, we will have headquarters proper in 82 cities, equipped with the

technical-material base needed for performing all maintenance and repair work on a local level.

At present, each territorial section contains operational subunits, true mobile laboratories that act promptly, depending on the demands and on the contracts concluded with our customers. In proportion to the appearance of new economic facilities, in direct relation to the rapid development of the production capacities, the number of these subunits is continually increasing. We have well-trained specialized personnel who possess all the technical resources for responding to the obligations that we assume by means of the service contracts. The range of services offered includes the putting of computer equipment into operation, preventive maintenance on these installations, overhauls at the request of the customers, and repairs in the IIRUC laboratories, at the enterprise's own headquarters.

The IIRUC provides maintenance and repair on six families of equipment—namely: three families of computer equipment proper (computer equipment, systems for computation, teletransmission and teleprocessing). The following three families belong to the field of computer technology: numerical controls for machine tools, automatic machinery for traffic control, and closed-circuit television and radiotelephones. The variety in the construction of the collection is extremely great, it including more than 800 different types, some having much precision machinery in their construction and others being very modern—with much electronics from generation 3.5-4.

It must be kept in mind that initially our unit had in its profile of activity just the maintenance of computer equipment. However, it is known that the family of computers now in circulation has been enlarged, so that the necessities have required a continual expansion of our profile, it now being possible for us to satisfy any request for technical assistance, regardless of what family the equipment belongs to.

A priority direction of our activity involves preventive maintenance on all equipment. In this regard, we consider periodic inspection an important aspect of the service technology that the IIRUC practices. The periodic inspection is made weekly, monthly or quarterly, depending on the complexity and characteristics of the equipment, in conformity with standards drawn up by the manufacturers and improved by the IIRUC on the basis of the experience accumulated.

Starting with 1980, we will implement the second component of the service technology, called reconditioning of computer equipment, which is based on the manufacture of the reconditioning set that will be introduced into the equipment scheduled for reconditioning. The age of the equipment, the legal provision on its period of notification, and the operating conditions in which it is used will be taken into account in scheduling the equipment for reconditioning. Two big problems have existed in this field: that of spare parts and that of personnel training.

Regarding spare parts, we were totally dependent on importation for a long time. Demonstrating in practice that we are capable of manufacturing such parts with our own resources, our enterprise has managed to create a production capacity that achieves different spare parts urgently needed for replacing the original ones. The manufacturing catalog now contains more than 5,000 assortments.

It must be emphasized that the technology for assimilating these parts is at a high level, they having great viability, as well as technical parameters similar to the original components produced abroad. The boldness of our researchers and the efforts of the staff have vanquished timidity and, having as a concern the reduction of the valuta effort, we have obtained with our own resources what we need.

All IIRUC units in the country have catalogs, so that the replacement and corrective operations are as easy as possible. For example, to the right of each component in the catalog there are also indicated the technical instructions and the type of machine to which it is adapted. A new technological conception is also the basis for our activity of replacing the different sub-assemblies (demonstration, cleaning, total replacement due to wear, and re-conditioning), operations to which the most modern technical procedures are applied.

The performance of the operations of preventive maintenance, assistance and commissioning only in terms of high quality is meant to be at the basis of the whole activity. In order to obtain high-quality results, we are continually concerned with training the staffs of workers that provide the service to customers. One of the measures adopted in this regard is that of publishing manuals that aid the computer equipment repairmen, manuals that contain concepts of mathematics and electrical engineering and the description and use of measurement and control apparatus and of electronic devices adapted to the practical necessities. Five manuals that aid the IIRUC specialists have been prepared thus far, manuals drawn up by a staff within the enterprise. The series of these manuals will continue, on the expanded subjects of our technical problems, up to 33 titles. All personnel have the obligation to study, to be familiar with everything that concerns the field of our activity, knowing that a promotion is determined by thorough mastery of knowledge and of the profession.

On the basis of the contracts concluded, the IIRUC units provide preventive maintenance in general on computer equipment. Some operations are performed right at the headquarters of the customers and, at other times, parts of sub-assemblies are brought to our sections for replacement of the defective elements. In carrying out these operations we take into account the advisability of the technical overhaul, the elimination of stoppages, and the effectiveness with which we can put the equipment back into operation.

Regarding the proper functioning of computer equipment, it is extremely important for the customer enterprises to also concern themselves with the

proper operation and current maintenance of the equipment. The IIRUC has also organized instruction courses for the operators of the customers. The courses are held in different centers in the country, including the capital, where lessons are taught and instruction is done in connection with using and maintaining the apparatus. We desire close collaboration with all customers for our services, so that the computer equipment is always kept in operating condition. The periodic inspections ensure continual operation and the prevention of possible defects. Consequently, all the factors involved must cooperate to ensure optimum functioning of the equipment that our socialist units possess.

The number of units that benefited from IIRUC services in 1978 exceeded 10,000. Our enterprise's activity also refers to other directions, such as, for example, relations of international cooperation. The enterprise provides—for foreign customers possessing computer technology of Romanian make—courses for training the specialized personnel.

The Enterprise for Maintenance and Repair of Computer Equipment has in its complex activity a number of measures that help to promptly handle—by means of a modern information system achieved by our specialists—the management of production, the behavior of the computer equipment, and the distribution of the resources on hand, including the management of spare parts.

This information system, called FOCA (card indexes, objectives, coding and applications), helps to, among other things, put into production the program of the service activity, offering, at the same time, also the data needed to carry out this program. The same system also ensures the supervision of the quality of the service performed and the behavior of the equipment that we have maintained. On the basis of the data on viability, corrections will be made by the producer in the area of improving the quality of the product.

Starting in 1980, the information system of the IIRUC will lead, by means of the teleprocessing that it provides, to better and faster information for the branch offices with regard to the distribution of spare parts over the territory of the country.

The prospect of using computer technology in the management of technological processes and in numerical control of machine tools in our country is mobilizing us especially both with regard to the material base for service and with regard to the training of the personnel of the IIRUC and the personnel of the customers.

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